RECEIVED
OCT 20 2016
Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

County Lewis & Clark
Facility & # 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run-on

ANNUAL GROUNDWATER EXT
SYSTEM PERFORMANCE RE
HELENA, MONTANA

Prepared For:

CITY OF HELENA
HELENA, MONTANA

Hydrometrics, Inc.
consulting scientists and engineers

OCTOBER 2016

RECEIVED
OCT 20 2016
Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

ANNUAL GROUNDWATER EXTRACTION SYSTEM PERFORMANCE REPORT HELENA, MONTANA

Prepared For:

CITY OF HELENA
HELENA, MONTANA

Hydrometrics, Inc.
consulting scientists and engineers

OCTOBER 2016

Hydrometrics, Inc.
consulting scientists and engineers

3020 Bozeman Avenue
Helena, MT 59601
(406) 443-4150
Fax: (406) 443-4155
www.hydrometrics.com

October 18, 2016

RECEIVED
OCT 20 2016
Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

Mr. John Collins
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

RE: Helena Landfill Groundwater Extraction System Performance Report, License #SW-0090

Dear John,

On behalf of the City of Helena, I am submitting the annual groundwater extraction system performance report for the City of Helena Landfill, plant ID 049 0014. The groundwater extraction system was installed in the spring of 2000 and is located just north of the landfill boundary. This treatment system includes three extraction wells (HL-99-1, HL-99-2, and HL-99-3) to intercept tetrachloroethene (PCE) impacted groundwater migrating downgradient of the landfill. The extracted groundwater is pumped through aeration nozzles into two lined ponds located on Bill Roberts Golf Course. In accordance with regulations, the treated water is sampled monthly to ensure the treatment goals have been met in conjunction with land application on the golf course.

The groundwater extraction system operated April 19, 2016 through October 10, 2016 for a total of 174 days. The batteries in the flowmeter displays were replaced in all three extraction wells prior to startup and calibration of the system on April 18, 2016. The pump in HL-99-3 was replaced on May 26, 2016 after the pump was found to inoperable on May 20; according to the hour meter, the pump was down for just over 12 days before the pump was replaced. Hydrometrics' personnel winterized the extraction system after the system was shut down on October 10th. Several tables showing all the data collected at the groundwater extraction system over the last year and calculations performed with that data are included as Attachment A to this report. A summary of the operational data is shown in Table 1. With a combined average flow of 57.2 gpm from the three extraction wells, a total of 13.85 million gallons of groundwater was extracted and treated this year.

Groundwater samples were collected in December 2015 and June 2016 from each of the extraction wells. The field book notes, sampling forms and lab reports for this sampling were included in the December 2015 and June 2016 data validation reports you have already received. Table 2 includes a summary of the sample results. Only those parameters that

were detected in at least one extraction well during the December 2015 or June 2016 sampling events were included. Assuming a conservative treatment level of 0.00025 mg/L for each compound and the total volume pumped for each well, the estimated mass of volatile organic compounds (VOCs) removed from each well was calculated. These values are also shown in Table 2.

TABLE 1. SUMMARY OF OPERATIONAL DATA

Extraction Well	Days Operated	Average Flowrate (gpm)	Total Volume Removed (gal)
HL-99-1	173.9	11.8	2,948,547
HL-99-2	173.9	18.4	4,599,864
HL-99-3	161.8	27.1	6,303,272
Total	**174**	**57.5**	**13,851,683**

TABLE 2. EXTRACTION WELL SAMPLE RESULTS AND MASS OF VOCS REMOVED

VOC	HL-99-1		HL-99-2		HL-99-3		Total	
	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)
1,1-Dichloroethane	0.00092	0.0075	0.0028	0.0444	0.0025	0.0601	0.0021	0.1120
Chloroform	0.0016	0.0151	0.0015	0.0218	0.0023	0.0548	0.0018	0.0916
Cis-1,2-dichloroethane	0.0022	0.0212	0.00119	0.0164	0.00140	0.0307	0.0016	0.0683
Dichlorodifluoromethane	0.00071	0.0051	0.0013	0.0183	0.00112	0.0232	0.00104	0.0466
Methylene chloride	<0.0005	0.0000	<0.0005	0.0000	0.00050	0.0067	.00050	0.0067
Tetrachloroethene (PCE)	0.0036	0.0374	0.0035	0.0557	0.0070	0.1804	0.0047	0.2735
Trichloroethene (TCE)	0.00095	0.0078	0.0009	0.0116	0.00125	0.0267	0.00104	0.0461
Total Mass Removed		**0.0940**		**0.168**		**0.383**		**0.645**

The sample results from the extraction wells indicate that the average PCE concentration being extracted from the system is 0.0047 mg/L for a total mass of PCE removed of 0.27 kg. The total mass of VOC's removed by the groundwater extraction system during the 2016 irrigation season was 0.65 kg.

During system operation, surface water samples were collected on a monthly basis from the golf course sprinkler system. These water quality samples ensure that treatment goals are met. In addition, a single sample was collected from the east golf course pond during the June sampling event. The field book notes and lab reports for each of these sampling events has been included as Attachment B to this report. The results from the monthly sampling events indicate that all VOCs were below their respective laboratory detection limits prior to land application at the golf course.

If you have any questions concerning this data or need any additional information to complete your files, please do not hesitate to call me at 443-4150, Ext. 172.

Sincerely,

Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: Randall Camp, City of Helena Public Works Director (w/attachments)
Pete Anderson, City of Helena Solid Waste Supervisor (w/attachments)
Mike Wignot, Hydrometrics, Inc. (w/out attachments)

ATTACHMENT A

DATA ANALYSIS FOR THE GROUNDWATER EXTRACTION SYSTEM

HL-99-1 Operational Data:

Date	Time	Hour Meter Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Hours Operated: Calculated from date	Hours Operated: Calculated from hour meter	Volume Extracted: Calculated from Totalizer 2 Readings	Volume Extracted: Calculated from Avg. Flow and Hour Meter Readings	Flowrate: Average Flowmeter Reading	Flowrate: Calculated from Totalizer and Hour meter	Volume Difference	% Difference
4/19/2016	13:05	0.0	0	11.72	0	0			11.72	0		
5/20/2016	10:48	741.3	438,537	12.94	741.7	741.3	438,537	548,414	12.33	9.9	109,877	25.1%
to date					741.7	741.3	438,537	548,414	12.33	9.9	109,877	25.1%
6/2/2016	15:50	1057.8	676,535	12.06	317.0	316.5	237,998	237,375	12.50	12.5	-623	-0.3%
to date					1058.7	1057.8	676,535	776,848	12.24	10.6	100,313	14.8%
6/30/2016	15:11	1729.3	1,155,550	11.83	671.4	671.5	479,015	481,264	11.95	11.9	2,249	0.5%
to date					1730.1	1729.3	1,155,550	1,259,363	12.14	11.1	103,813	9.0%
7/29/2016	12:15	2422.2	1,631,300	11.33	693.1	692.9	475,750	481,427	11.58	11.4	5,677	1.2%
to date					2423.2	2422.2	1,631,300	1,740,496	11.98	11.2	109,196	6.7%
8/18/2016	9:04	2899.2	1,963,780	11.61	476.8	477.0	332,480	328,271	11.47	11.6	-4,209	-1.3%
to date					2900.0	2899.2	1,963,780	2,072,638	11.92	11.3	108,858	5.5%
9/30/2016	10:06	3932.2	2,683,750	11.50	1033.0	1033.0	719,970	716,179	11.56	11.6	-3,791	-0.5%
					3933.0	3932.2	2,683,750	2,797,142	11.86	11.4	113,392	4.2%
10/10/2016	11:50	4173.9	2,847,760	11.20	241.7	241.7	164,010	164,598	11.35	11.3	588	0.4%
					4174.7	4173.9	2,847,760	2,948,547	11.77	11.4	100,787	3.5%
Average/Total for 2016 Operating Season					**4174.7**	**4173.9**	**2,847,760**	**2,948,547**	**11.8**	**11.4**		

VOC Sample Data (mg/L):

VOC	Cleanup Level*	12/18/2015	6/2/2016	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.00025	0.0011	0.00074	0.00092	0.0075
Chloroform	0.00025	0.0016	0.0016	0.0016	0.0151
Cis-1,2-dichloroethane	0.00025	0.0022	0.0021	0.0022	0.0212
Dichlorodifluoromethane	0.00025	0.00071	0.00070	0.00071	0.0051
Methylene chloride	0.00025	<0.0005	<0.0005	<0.0005	0.0000
Tetrachloroethene	0.00025	0.0043	0.0029	0.0036	0.0374
Trichloroethene	0.00025	0.0011	0.00079	0.00095	0.0078
Trichlorofluoromethane	0.00025	<0.0005	<0.0005	<0.0005	0.0000
Total					**0.0940**

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:
mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
(0.0036 mg/L PCE - 0.00025 mg/L)*22,964,423 gallons water *
3.785 L/gal * 1/10^6 kg/mg = 0.0376 kg PCE removed

HL-99-2 Operational Data:

Date	Time	Hour Meter Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Hours Operated: Calculated from date	Hours Operated: Calculated from hour meter	Volume Extracted: Calculated from Totalizer 2 Readings	Volume Extracted: Calculated from Flowmeter and Hour Meter Readings	Flowrate: Average Flowmeter Reading	Flowrate: Calculated from Totalizer and Hour meter	Volume Difference	% Difference	
4/19/2016	13:10	0.0	0	23.44	0	0			23.44	0			
5/20/2016	10:53	741.3	1,026,170	21.94	741.7	741.3	1,026,170	1,009,206	22.69	23.1	-16,964	-1.7%	
to date					741.7	741.3	1,026,170	1,009,206	22.69	23.1	-16,964	-1.7%	
6/2/2016	16:25	1058.5	1,434,410	20.78	317.5	317.2	408,240	406,524	21.36	21.4	-1,716	-0.4%	
to date					1059.3	1058.5	1,434,410	1,400,607	22.05	22.6	-33,803	-2.4%	
6/30/2016	15:16	1729.6	1,682,250	18.28	670.8	671.1	247,840	786,395	19.53	6.2	538,555	217.3%	Flowmeter stuck.
to date					1730.1	1729.6	1,682,250	2,190,711	21.11	16.2	508,461	30.2%	
7/29/2016	12:20	2422.7	2,390,830	16.11	693.1	693.1	708,580	715,071	17.20	17.0	6,491	0.9%	
to date					2423.2	2422.7	2,390,830	2,923,230	20.11	16.4	532,400	22.3%	
8/18/2016	9:08	2899.8	2,843,430	15.50	476.8	477.1	452,600	452,434	15.81	15.8	-166	0.0%	
to date					2900.0	2899.8	2,843,430	3,365,218	19.34	16.3	521,788	18.4%	
9/30/2016	10:11	3932.5	3,800,140	15.38	1033.0	1032.7	956,710	956,693	15.44	15.4	-17	0.0%	
					3933.0	3932.5	3,800,140	4,430,130	18.78	16.1	629,990	16.6%	
10/10/2016	11:56	4174.2	4,026,510	15.50	241.7	241.7	226,370	223,911	15.44	15.6	-2,459	-1.1%	
					4174.8	4174.2	4,026,510	4,599,864	18.37	16.1	573,354	14.2%	
Average/Total for 2016 Operating Season					**4174.8**	**4174.2**	**4,026,510**	**4,599,864**	**18.4**	**16.1**			

VOC Sample Data (mg/L):

VOC	Cleanup Level*	12/18/2015	6/2/2016	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.00025	0.0040	0.0016	0.0028	0.0444
Chloroform	0.00025	0.0020	0.0010	0.0015	0.0218
Cis-1,2-dichloroethane	0.00025	0.0016	0.00078	0.00119	0.0164
Dichlorodifluoromethane	0.00025	0.0016	0.0010	0.0013	0.0183
Methylene chloride	0.00025	<0.0005	<0.0005	<0.0005	0.0000
Tetrachloroethene	0.00025	0.0043	0.0026	0.0035	0.0557
Trichloroethene	0.00025	0.0011	0.00073	0.0009	0.0116
Trichlorofluoromethane	0.00025	<0.0005	<0.0005	<0.0005	0.0000
Total					**0.1681**

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:
mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
(0.0035 mg/L PCE - 0.00025 mg/L)*4,680,590 gallons water *
3.785 L/gal * 1/10^6 kg/mg = 0.0567 kg PCE removed

HL-99-3 Operational Data:

					Hours Operated		Volume Extracted		Flowrate				
Date	Time	Hour Meter Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Flowmeter and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter	Volume Difference	% Difference	
4/19/2016	13:15	0.0	0	28.31	0	0			28.31	0			
5/20/2016	10:55	596.5	876,460	0.00	741.7	596.5	876,460	1,013,215	28.31	19.7	136,755	15.6%	Pump broken. Ordered Replacement
to date					741.7	596.5	876,460	1,013,215	28.31	19.7	136,755	15.6%	
5/26/2016	13:35	596.5	876,460	25.45	0.0	0.0			25.45	0.0			New pump installed and started.
6/2/2016	17:10	767.5	876,585	25.56	171.6	171.0	125	261,681	25.51	0.0	261,556	>100%	
to date					1059.9	767.5	876,585	1,217,562	26.44	13.8	340,977	38.9%	
6/30/2016	15:23	1438.2	896,834	0.00	670.2	670.7	20,249	984,722	24.47	0.5	964,473	>100%	Flowmeter stuck.
to date					1730.1	1438.2	896,834	2,281,560	26.44	8.6	1,384,726	>100%	
7/6/2016	10:33			23.38	139.2			204,324	24.47				Flowmeter fixed.
			Adjusted to	28.28	1869.3			2,879,657	25.68				Flowmeter adjusted
7/29/2016	12:30	2132.2	1,834,410	27.56	693.1	694.0	937,576	1,080,974	25.96	22.5	143,398	15.3%	
to date					2423.3	2132.2	1,834,410	3,380,390	26.42	12.6	1,545,980	84.3%	
8/18/2016	9:13	2608.1	2,605,090	26.22	476.7	475.9	770,680	767,817	26.89	26.9	-2,863	-0.4%	
to date					2900.0	2608.1	2,605,090	4,130,336	26.39	15.0	1,525,246	58.5%	
9/30/2016	10:16	3641.1	4,256,370	27.38	1033.0	1033.0	1,651,280	1,661,064	26.80	26.6	9,784	0.6%	
					3933.0	3641.1	4,256,370	5,793,172	26.52	18.0	1,536,802	36.1%	
10/10/2016	12:01	3882.6	4,655,470	31.38	241.8	241.5	399,100	425,716	29.38	27.5	26,616	6.7%	
					4174.8	3882.6	4,655,470	6,303,272	27.06	18.6	1,647,802	35.4%	
	Average/Total for 2016 Operating Season				**4174.8**	**3882.6**	**4,655,470**	**6,303,272**	**27.1**	**18.6**	Add 12% for	Calibration error	
	Average/Total with Correction Factor						**5,214,126**	**7,059,664**	**30.3**	**20.8**			

VOC Sample Data (mg/L):

VOC	Cleanup Level	12/18/2015	6/2/2016	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.00025	0.0021	0.0029	0.0025	0.0601
Chloroform	0.00025	0.0024	0.0022	0.0023	0.0548
Cis-1,2-dichloroethane	0.00025	0.0013	0.0015	0.00140	0.0307
Dichlorodifluoromethane	0.00025	0.00084	0.0014	0.00112	0.0232
Methylene chloride	0.00025	<0.0005	0.0005	0.00050	0.0067
Tetrachloroethene	0.00025	0.0068	0.0072	0.0070	0.1804
Trichloroethene	0.00025	0.0011	0.0014	0.00125	0.0267
Trichlorofluoromethane	0.00025	<0.0005	<0.0005	<0.0005	0.0000
Total					**0.3826**

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:
mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
= (0.0070 mg/L PCE - 0.00025 mg/L)*7,043,285 gallons water *
3.785 L/gal * 1/10^6 kg/mg = 0.1799 kg PCE removed

ATTACHMENT B

FIELD BOOK NOTES AND
LAB REPORTS FOR SURFACE WATER SAMPLES

DATE 5/17/10

PERSONNEL: R. WOODS

WEATHER (62° F, BREEZE, P. CLOUDY)

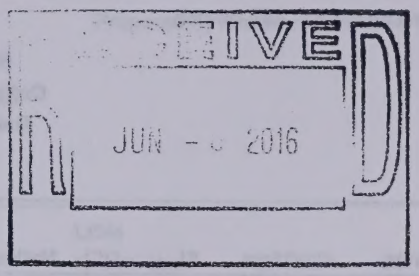
ON SITE @ NL-99-3 TO CHECK PUMP. WAS TOLD THAT PUMP IS NOT PUMPING. PUMP POWER WAS SWITCHED TO OFF UPON ARRIVAL. TURNED ON POWER TO PUMP AND PUMP DOES NOT POWER UP. TOLD JODI BINGHAM ABOUT IT.

SITE	SAMPLE #	DATE	TIME	BOTTLES
BILL	CHHL-	5/20/16	11:15	3/VOC/40mL/VOC
ROBERTS	1605-			1 TRIP BLANK
SPRINKLER	100			

SITE	TIME	HOUR	FLOW	TOTALIZER
HL-99-1	10:46	0741.3	12.94	T1: 360456
				T2: 438537
HL-99-2	10:53	0741.3	21.94	T1: 121360
				T2: 102617
HL-99-3	10:58	0596.5	NOT RUNNING	T1: 261483
				T2: 876460

ENERGY LABORATORIES
Trust our People. Trust our Data.
www.energylab.com
Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

ANALYTICAL SUMMARY REPORT



June 03, 2016

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Work Order: H16050379

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 2 samples for Hydrometrics Inc on 5/20/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16050379-001	CHHL-1605-100	05/20/16 11:15	05/20/16	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H16050379-002	TB 5562	05/20/16 11:15	05/20/16	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Amanda Carlson
Assistant Laboratory Manager-Helena,MT

Digitally signed by
Amanda B. Carlson
Date: 2016.06.03 11:15:43 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16050379-001
Client Sample ID: CHHL-1605-100

Report Date: 06/03/16
Collection Date: 05/20/16 11:15
DateReceived: 05/20/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	05/25/16 15:17 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	05/25/16 15:17 / kjw
Benzene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	05/25/16 15:17 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	05/25/16 15:17 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	05/25/16 15:17 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	05/25/16 15:17 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	05/25/16 15:17 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	05/25/16 15:17 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	05/25/16 15:17 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	05/25/16 15:17 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	05/25/16 15:17 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Styrene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Toluene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16050379-001
Client Sample ID: CHHL-1605-100

Report Date: 06/03/16
Collection Date: 05/20/16 11:15
DateReceived: 05/20/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	05/25/16 15:17 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	05/25/16 15:17 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	05/25/16 15:17 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	05/25/16 15:17 / kjw
Surr: 1,2-Dichloroethane-d4	118	%REC		70-130		SW8260B	05/25/16 15:17 / kjw
Surr: Dibromofluoromethane	110	%REC		77-126		SW8260B	05/25/16 15:17 / kjw
Surr: p-Bromofluorobenzene	110	%REC		76-127		SW8260B	05/25/16 15:17 / kjw
Surr: Toluene-d8	90.0	%REC		79-122		SW8260B	05/25/16 15:17 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16050379-002
Client Sample ID: TB 5562

Report Date: 06/03/16
Collection Date: 05/20/16 11:15
DateReceived: 05/20/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	05/25/16 13:30 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	05/25/16 13:30 / kjw
Benzene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	05/25/16 13:30 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	05/25/16 13:30 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	05/25/16 13:30 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	05/25/16 13:30 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	05/25/16 13:30 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	05/25/16 13:30 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	05/25/16 13:30 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	05/25/16 13:30 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	05/25/16 13:30 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Styrene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Toluene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16050379-002
Client Sample ID: TB 5562

Report Date: 06/03/16
Collection Date: 05/20/16 11:15
DateReceived: 05/20/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	05/25/16 13:30 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	05/25/16 13:30 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	05/25/16 13:30 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	05/25/16 13:30 / kjw
Surr: 1,2-Dichloroethane-d4	113	%REC		70-130		SW8260B	05/25/16 13:30 / kjw
Surr: Dibromofluoromethane	107	%REC		77-126		SW8260B	05/25/16 13:30 / kjw
Surr: p-Bromofluorobenzene	113	%REC		76-127		SW8260B	05/25/16 13:30 / kjw
Surr: Toluene-d8	98.0	%REC		79-122		SW8260B	05/25/16 13:30 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/03/16
Work Order: H16050379

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R115524
Lab ID: 052516_CCV_3	Continuing Calibration Verification Standard								05/25/16 10:58
trans-1,4-Dichloro-2-butene	4.48	ug/L	0.50	90	70	130			
Acetone	48.0	ug/L	10	96	70	130			
Acrylonitrile	44.0	ug/L	20	88	70	130			
Benzene	4.52	ug/L	0.50	90	70	130			
Bromochloromethane	4.48	ug/L	0.50	90	70	130			
Bromodichloromethane	4.88	ug/L	0.50	98	70	130			
Bromoform	4.00	ug/L	0.50	80	70	130			
Bromomethane	4.88	ug/L	0.50	98	70	130			
Carbon disulfide	4.96	ug/L	0.50	99	70	130			
Carbon tetrachloride	4.72	ug/L	0.50	94	70	130			
Chlorobenzene	4.76	ug/L	0.50	95	70	130			
Chlorodibromomethane	4.80	ug/L	0.50	96	70	130			
Chloroethane	5.16	ug/L	0.50	103	70	130			
Chloroform	4.20	ug/L	0.50	84	80	120			
Chloromethane	5.00	ug/L	0.50	100	70	130			
1,2-Dibromo-3-chloropropane	4.32	ug/L	0.50	86	70	130			
1,2-Dibromoethane	4.76	ug/L	0.50	95	70	130			
Dibromomethane	4.68	ug/L	0.50	94	70	130			
1,2-Dichlorobenzene	4.64	ug/L	0.50	93	70	130			
1,4-Dichlorobenzene	4.36	ug/L	0.50	87	70	130			
Dichlorodifluoromethane	4.84	ug/L	0.50	97	70	130			
1,1-Dichloroethane	4.80	ug/L	0.50	96	70	130			
1,2-Dichloroethane	4.40	ug/L	0.50	88	70	130			
1,1-Dichloroethene	4.32	ug/L	0.50	86	80	120			
cis-1,2-Dichloroethene	4.76	ug/L	0.50	95	70	130			
trans-1,2-Dichloroethene	4.96	ug/L	0.50	99	70	130			
1,2-Dichloropropane	4.72	ug/L	0.50	94	80	120			
cis-1,3-Dichloropropene	4.68	ug/L	0.50	94	70	130			
trans-1,3-Dichloropropene	4.72	ug/L	0.50	94	70	130			
Ethylbenzene	4.88	ug/L	0.50	98	80	120			
2-Hexanone	50.0	ug/L	10	100	70	130			
Iodomethane	5.08	ug/L	0.50	102	70	130			
Methyl ethyl ketone	46.0	ug/L	10	92	70	130			
Methyl isobutyl ketone	54.4	ug/L	10	109	70	130			
Methylene chloride	3.76	ug/L	0.50	75	70	130			
Styrene	5.12	ug/L	0.50	102	70	130			
1,1,1,2-Tetrachloroethane	5.36	ug/L	0.50	107	70	130			
1,1,2,2-Tetrachloroethane	4.40	ug/L	0.50	88	70	130			
Tetrachloroethene	5.20	ug/L	0.50	104	70	130			
Toluene	4.92	ug/L	0.50	98	80	120			
1,1,1-Trichloroethane	4.44	ug/L	0.50	89	70	130			
1,1,2-Trichloroethane	4.72	ug/L	0.50	94	70	130			
Trichloroethene	4.84	ug/L	0.50	97	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/03/16
Work Order: H16050379

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R115524
Lab ID: 052516_CCV_3	Continuing Calibration Verification Standard								05/25/16 10:58
Trichlorofluoromethane	5.12	ug/L	0.50	102	70	130			
1,2,3-Trichloropropane	4.36	ug/L	0.50	87	70	130			
Vinyl acetate	4.68	ug/L	0.50	94	70	130			
Vinyl chloride	4.64	ug/L	0.50	93	80	120			
m+p-Xylenes	9.60	ug/L	0.50	96	70	130			
o-Xylene	4.96	ug/L	0.50	99	70	130			
Surr: 1,2-Dichloroethane-d4			1.0	115	69	131			
Surr: Dibromofluoromethane			1.0	103	70	125			
Surr: p-Bromofluorobenzene			1.0	99	76	123			
Surr: Toluene-d8			1.0	111	80	119			
Method: SW8260B									Batch: R115524
Lab ID: 052516_LCS_4	Laboratory Control Sample				Run: 1SATURN_160525A				05/25/16 11:38
trans-1,4-Dichloro-2-butene	4.68	ug/L	0.50	94	67	132			
Acetone	44.4	ug/L	10	89	55	144			
Acrylonitrile	46.8	ug/L	20	94	63	134			
Benzene	4.40	ug/L	0.50	88	69	129			
Bromochloromethane	4.32	ug/L	0.50	86	72	125			
Bromodichloromethane	4.60	ug/L	0.50	92	71	122			
Bromoform	3.73	ug/L	0.50	75	65	130			
Bromomethane	5.88	ug/L	0.50	118	60	136			
Carbon disulfide	5.12	ug/L	0.50	102	71	135			
Carbon tetrachloride	4.72	ug/L	0.50	94	77	121			
Chlorobenzene	4.48	ug/L	0.50	90	78	120			
Chlorodibromomethane	4.44	ug/L	0.50	89	70	122			
Chloroethane	5.72	ug/L	0.50	114	62	135			
Chloroform	4.24	ug/L	0.50	85	71	121			
Chloromethane	6.08	ug/L	0.50	122	66	139			
1,2-Dibromo-3-chloropropane	4.24	ug/L	0.50	85	59	130			
1,2-Dibromoethane	4.68	ug/L	0.50	94	60	137			
Dibromomethane	4.48	ug/L	0.50	90	69	122			
1,2-Dichlorobenzene	4.40	ug/L	0.50	88	74	122			
1,4-Dichlorobenzene	4.28	ug/L	0.50	86	75	122			
Dichlorodifluoromethane	5.80	ug/L	0.50	116	57	144			
1,1-Dichloroethane	4.52	ug/L	0.50	90	76	125			
1,2-Dichloroethane	4.24	ug/L	0.50	85	69	131			
1,1-Dichloroethene	3.74	ug/L	0.50	75	67	129			
cis-1,2-Dichloroethene	4.64	ug/L	0.50	93	75	122			
trans-1,2-Dichloroethene	4.72	ug/L	0.50	94	75	124			
1,2-Dichloropropane	4.80	ug/L	0.50	96	75	127			
cis-1,3-Dichloropropene	4.68	ug/L	0.50	94	73	124			
trans-1,3-Dichloropropene	4.16	ug/L	0.50	83	72	127			
Ethylbenzene	4.80	ug/L	0.50	96	74	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/03/16
Work Order: H16050379

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R115524
Lab ID: 052516_LCS_4	Laboratory Control Sample				Run: 1SATURN_160525A				05/25/16 11:38
2-Hexanone	47.6	ug/L	10	95	70	128			
Iodomethane	4.76	ug/L	0.50	95	52	130			
Methyl ethyl ketone	47.2	ug/L	10	94	56	141			
Methyl isobutyl ketone	52.8	ug/L	10	106	71	121			
Methylene chloride	3.72	ug/L	0.50	74	61	125			
Styrene	5.00	ug/L	0.50	100	75	120			
1,1,1,2-Tetrachloroethane	4.96	ug/L	0.50	99	76	122			
1,1,2,2-Tetrachloroethane	4.24	ug/L	0.50	85	67	124			
Tetrachloroethene	5.04	ug/L	0.50	101	75	126			
Toluene	4.88	ug/L	0.50	98	73	122			
1,1,1-Trichloroethane	4.48	ug/L	0.50	90	76	124			
1,1,2-Trichloroethane	4.16	ug/L	0.50	83	72	125			
Trichloroethene	4.84	ug/L	0.50	97	72	126			
Trichlorofluoromethane	6.48	ug/L	0.50	130	73	131			
1,2,3-Trichloropropane	4.12	ug/L	0.50	82	58	142			
Vinyl acetate	5.64	ug/L	0.50	113	47	154			
Vinyl chloride	5.40	ug/L	0.50	108	69	129			
m+p-Xylenes	9.20	ug/L	0.50	92	72	124			
o-Xylene	4.84	ug/L	0.50	97	74	123			
Surr: 1,2-Dichloroethane-d4			1.0	112	69	131			
Surr: Dibromofluoromethane			1.0	106	70	125			
Surr: p-Bromofluorobenzene			1.0	100	76	123			
Surr: Toluene-d8			1.0	106	80	119			
Lab ID: 052516_MBLK_6	Method Blank				Run: 1SATURN_160525A				05/25/16 12:55
trans-1,4-Dichloro-2-butene	ND	ug/L	0.50						
Acetone	ND	ug/L	10						
Acrylonitrile	ND	ug/L	20						
Benzene	ND	ug/L	0.50						
Bromochloromethane	ND	ug/L	0.50						
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Bromomethane	ND	ug/L	0.50						
Carbon disulfide	ND	ug/L	0.50						
Carbon tetrachloride	ND	ug/L	0.50						
Chlorobenzene	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Chloromethane	ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane	ND	ug/L	0.50						
1,2-Dibromoethane	ND	ug/L	0.50						
Dibromomethane	ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/03/16
Work Order: H16050379

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R115524
Lab ID: 052516_MBLK_6	Method Blank				Run: 1SATURN_160525A				05/25/16 12:55
1,2-Dichlorobenzene	ND	ug/L	0.50						
1,4-Dichlorobenzene	ND	ug/L	0.50						
Dichlorodifluoromethane	ND	ug/L	0.50						
1,1-Dichloroethane	ND	ug/L	0.50						
1,2-Dichloroethane	ND	ug/L	0.50						
1,1-Dichloroethene	ND	ug/L	0.50						
cis-1,2-Dichloroethene	ND	ug/L	0.50						
trans-1,2-Dichloroethene	ND	ug/L	0.50						
1,2-Dichloropropane	ND	ug/L	0.50						
cis-1,3-Dichloropropene	ND	ug/L	0.50						
trans-1,3-Dichloropropene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
2-Hexanone	ND	ug/L	10						
Iodomethane	ND	ug/L	0.50						
Methyl ethyl ketone	ND	ug/L	10						
Methyl isobutyl ketone	ND	ug/L	10						
Methylene chloride	ND	ug/L	0.50						
Styrene	ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50						
Tetrachloroethene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
1,1,1-Trichloroethane	ND	ug/L	0.50						
1,1,2-Trichloroethane	ND	ug/L	0.50						
Trichloroethene	ND	ug/L	0.50						
Trichlorofluoromethane	ND	ug/L	0.50						
1,2,3-Trichloropropane	ND	ug/L	0.50						
Vinyl acetate	ND	ug/L	0.50						
Vinyl chloride	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			1.0	113	69	131			
Surr: Dibromofluoromethane			1.0	104	70	125			
Surr: p-Bromofluorobenzene			1.0	107	76	123			
Surr: Toluene-d8			1.0	98	80	119			
Lab ID: H16050379-001AMS	Sample Matrix Spike				Run: 1SATURN_160525A				05/25/16 15:52
trans-1,4-Dichloro-2-butene	10.2	ug/L	1.0	102	67	132			
Acetone	92.8	ug/L	20	93	55	144			
Acrylonitrile	102	ug/L	40	102	63	134			
Benzene	9.44	ug/L	1.0	94	69	129			
Bromochloromethane	10.1	ug/L	1.0	101	72	125			
Bromodichloromethane	7.22	ug/L	1.0	72	71	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/03/16
Work Order: H16050379

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R115524
Lab ID: H16050379-001AMS	Sample Matrix Spike				Run: 1SATURN_160525A				05/25/16 15:52
Bromoform	7.32	ug/L	1.0	73	65	130			
Bromomethane	12.2	ug/L	1.0	122	60	136			
Carbon disulfide	9.84	ug/L	1.0	98	71	135			
Carbon tetrachloride	9.36	ug/L	1.0	94	77	121			
Chlorobenzene	8.16	ug/L	1.0	82	78	120			
Chlorodibromomethane	8.16	ug/L	1.0	82	70	122			
Chloroethane	5.14	ug/L	1.0	51	62	135			S
Chloroform	8.64	ug/L	1.0	86	71	121			
Chloromethane	12.5	ug/L	1.0	125	66	139			
1,2-Dibromo-3-chloropropane	8.24	ug/L	1.0	82	59	130			
1,2-Dibromoethane	9.36	ug/L	1.0	94	60	137			
Dibromomethane	9.28	ug/L	1.0	93	69	122			
1,2-Dichlorobenzene	8.88	ug/L	1.0	89	74	122			
1,4-Dichlorobenzene	8.32	ug/L	1.0	83	75	122			
Dichlorodifluoromethane	11.0	ug/L	1.0	110	57	144			
1,1-Dichloroethane	8.88	ug/L	1.0	89	76	125			
1,2-Dichloroethane	9.44	ug/L	1.0	94	69	131			
1,1-Dichloroethene	8.72	ug/L	1.0	87	67	129			
cis-1,2-Dichloroethene	9.44	ug/L	1.0	94	75	122			
trans-1,2-Dichloroethene	9.60	ug/L	1.0	96	75	124			
1,2-Dichloropropane	8.88	ug/L	1.0	89	75	127			
cis-1,3-Dichloropropene	8.72	ug/L	1.0	87	73	124			
trans-1,3-Dichloropropene	7.28	ug/L	1.0	73	72	127			
Ethylbenzene	9.04	ug/L	1.0	90	74	125			
2-Hexanone	100	ug/L	20	100	70	128			
Iodomethane	9.60	ug/L	1.0	96	52	130			
Methyl ethyl ketone	102	ug/L	20	102	56	141			
Methyl isobutyl ketone	107	ug/L	20	107	71	121			
Methylene chloride	7.78	ug/L	1.0	78	61	125			
Styrene	10.1	ug/L	1.0	101	75	120			
1,1,1,2-Tetrachloroethane	9.04	ug/L	1.0	90	76	122			
1,1,2,2-Tetrachloroethane	8.72	ug/L	1.0	87	67	124			
Tetrachloroethene	9.20	ug/L	1.0	92	75	126			
Toluene	9.20	ug/L	1.0	92	73	122			
1,1,1-Trichloroethane	9.20	ug/L	1.0	92	76	124			
1,1,2-Trichloroethane	9.04	ug/L	1.0	90	72	125			
Trichloroethene	8.72	ug/L	1.0	87	72	126			
Trichlorofluoromethane	12.7	ug/L	1.0	127	73	131			
1,2,3-Trichloropropane	8.96	ug/L	1.0	90	58	142			
Vinyl acetate	12.6	ug/L	1.0	126	47	154			
Vinyl chloride	10.8	ug/L	1.0	108	69	129			
m+p-Xylenes	18.0	ug/L	1.0	90	72	124			
o-Xylene	9.44	ug/L	1.0	94	74	123			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/03/16
Work Order: H16050379

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Batch: R115524	
Lab ID: H16050379-001AMS	Sample Matrix Spike				Run: 1SATURN_160525A			05/25/16 15:52	
Surr: 1,2-Dichloroethane-d4			2.0	125	69	131			
Surr: Dibromofluoromethane			2.0	113	70	125			
Surr: p-Bromofluorobenzene			2.0	101	76	123			
Surr: Toluene-d8			2.0	102	80	119			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.									
Lab ID: H16050379-001AMSD	Sample Matrix Spike Duplicate				Run: 1SATURN_160525A			05/25/16 16:28	
trans-1,4-Dichloro-2-butene	10.1	ug/L	1.0	101	67	132	0.8	20	
Acetone	96.8	ug/L	20	97	55	144	4.2	20	
Acrylonitrile	106	ug/L	40	106	63	134	4.6	20	
Benzene	9.44	ug/L	1.0	94	69	129	0.0	20	
Bromochloromethane	11.4	ug/L	1.0	114	72	125	12	20	
Bromodichloromethane	7.26	ug/L	1.0	73	71	122	0.6	20	
Bromoform	7.28	ug/L	1.0	73	65	130	0.5	20	
Bromomethane	12.6	ug/L	1.0	126	60	136	2.6	20	
Carbon disulfide	9.84	ug/L	1.0	98	71	135	0.0	20	
Carbon tetrachloride	9.76	ug/L	1.0	98	77	121	4.2	20	
Chlorobenzene	9.04	ug/L	1.0	90	78	120	10	20	
Chlorodibromomethane	8.48	ug/L	1.0	85	70	122	3.8	20	
Chloroethane	4.86	ug/L	1.0	49	62	135	5.4	20	S
Chloroform	8.96	ug/L	1.0	90	71	121	3.6	20	
Chloromethane	12.7	ug/L	1.0	127	66	139	1.9	20	
1,2-Dibromo-3-chloropropane	8.64	ug/L	1.0	86	59	130	4.7	20	
1,2-Dibromoethane	9.36	ug/L	1.0	94	60	137	0.0	20	
Dibromomethane	9.44	ug/L	1.0	94	69	122	1.7	20	
1,2-Dichlorobenzene	9.52	ug/L	1.0	95	74	122	7.0	20	
1,4-Dichlorobenzene	8.56	ug/L	1.0	86	75	122	2.8	20	
Dichlorodifluoromethane	11.6	ug/L	1.0	116	57	144	4.9	20	
1,1-Dichloroethane	9.20	ug/L	1.0	92	76	125	3.5	20	
1,2-Dichloroethane	9.20	ug/L	1.0	92	69	131	2.6	20	
1,1-Dichloroethene	8.88	ug/L	1.0	89	67	129	1.8	20	
cis-1,2-Dichloroethene	10.0	ug/L	1.0	100	75	122	5.8	20	
trans-1,2-Dichloroethene	9.84	ug/L	1.0	98	75	124	2.5	20	
1,2-Dichloropropane	9.36	ug/L	1.0	94	75	127	5.3	20	
cis-1,3-Dichloropropene	9.36	ug/L	1.0	94	73	124	7.1	20	
trans-1,3-Dichloropropene	7.76	ug/L	1.0	78	72	127	6.4	20	
Ethylbenzene	9.60	ug/L	1.0	96	74	125	6.0	20	
2-Hexanone	105	ug/L	20	105	70	128	4.7	20	
Iodomethane	10.1	ug/L	1.0	101	52	130	4.9	20	
Methyl ethyl ketone	110	ug/L	20	110	56	141	8.3	20	
Methyl isobutyl ketone	114	ug/L	20	114	71	121	5.8	20	
Methylene chloride	8.64	ug/L	1.0	86	61	125	11	20	
Styrene	10.3	ug/L	1.0	103	75	120	2.4	20	
1,1,1,2-Tetrachloroethane	10.2	ug/L	1.0	102	76	122	12	20	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/03/16
Work Order: H16050379

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R115524
Lab ID: H16050379-001AMSD	Sample Matrix Spike Duplicate				Run: 1SATURN_160525A				05/25/16 16:28
1,1,2,2-Tetrachloroethane	8.80	ug/L	1.0	88	67	124	0.9	20	
Tetrachloroethene	9.68	ug/L	1.0	97	75	126	5.1	20	
Toluene	9.52	ug/L	1.0	95	73	122	3.4	20	
1,1,1-Trichloroethane	8.96	ug/L	1.0	90	76	124	2.6	20	
1,1,2-Trichloroethane	8.80	ug/L	1.0	88	72	125	2.7	20	
Trichloroethene	9.20	ug/L	1.0	92	72	126	5.4	20	
Trichlorofluoromethane	12.6	ug/L	1.0	126	73	131	1.3	20	
1,2,3-Trichloropropane	9.12	ug/L	1.0	91	58	142	1.8	20	
Vinyl acetate	12.7	ug/L	1.0	127	47	154	1.3	20	
Vinyl chloride	12.1	ug/L	1.0	121	69	129	11	20	
m+p-Xylenes	18.5	ug/L	1.0	92	72	124	2.6	20	
o-Xylene	10.1	ug/L	1.0	101	74	123	6.6	20	
Surr: 1,2-Dichloroethane-d4			2.0	126	69	131			
Surr: Dibromofluoromethane			2.0	118	70	125			
Surr: p-Bromofluorobenzene			2.0	106	76	123			
Surr: Toluene-d8			2.0	103	80	119			

- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

Hydrometrics Inc

H16050379

Login completed by: Tracy L. Lorash
Reviewed by: BL2000\rwilliams
Reviewed Date: 5/23/2016

Date Received: 5/20/2016
Received by: TLL
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	5.4°C Blue Ice - From Field		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Applicable ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

Temperature blank was received; however the temperature was taken using a client sample. tl 5/20/16

CHAIN OF CUSTODY RECORD

Hydrometrics, Inc.

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

PROJ. NO.	PROJECT NAME
1273	C.O.H.

SAMPLERS: (Signature)

DATE	TIME	COMP	GRAB	SAMPLE NUMBER	NO. OF CONTAINERS	Commons UF / RAW	Nutrients UF / H_2SO_4	Diss. Metal F / HNO_3	CN UF / NaOH	Total Metals UF / HNO_3	Total Recoverable Metals UF / HNO_3	BTEX	TPH	METHOD 8260 LOW LIST - UF/HCl	0.0005 MS/L DETECTION							REMARKS
5/20/16	11:15		X	CHHL-1605-100	3									X	X	-KD 5/20/16						H16050579

Relinquished (Signature)	Date / Time	Received by (Signature)	Lab	P.O. #	Shipped via: Bus FedEx UPS
	5/20/16 13:33		ENERGY LABS - HELENA	HLW 11721	Other HAND DELIVERED
					Air Bill #

Relinquished (Signature)	Date / Time	Received by (Signature)	Remarks
			5.4° on blue ice handdel.

Relinquished (Signature)	Date / Time	Received for Laboratory by (Signature)	Date / Time	Enclosed: ☐ Parameter sheet w/detection limits ☐ QA / AC standard mixing instructions ☐ Cover letter ☒ Other SAME AS HISTORICALLY
			5/20/16 13:33	Split Samples: ☐ Accepted ☐ Declined

Return results & electronic copy to:

HFORM-1 07/11

Hydrometrics, Inc.

CHAIN OF CUSTODY RECORD

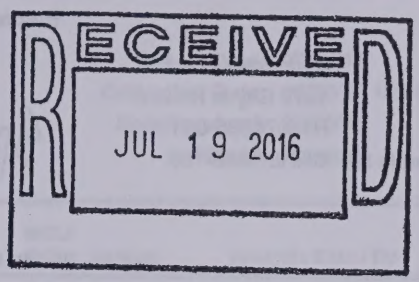
SITE	SAMPLE #	DATE	TIME	BOTTLES
BILL	CHHL -	6/30/16	15:35	3/unf/VOC/40 mL
ROBERTS	1606 -			1 TRIP BLANK
SPRINKLER	100			
BILL	CHHL -	6/30/16	16:00	
ROBERTS	1606 -			
POND	101			

SITE	TIME	HOURS	FLOW	TOTALIZER
HL-99-1	15:11	1729.3	11.83	T1: 432269
				T2: 115555
HL-99-2	15:16	1729.6	18.28	T1: 787122
				T2: 168225
HL-993	15:23	1438.2	∅	T1: 26688
				T2: 896834

FLOW METER WILL NOT READ - ~~0.00~~ ALWAYS AT 0.00 GPM

ENERGY LABORATORIES
Trust our People. Trust our Data.
www.energylab.com
Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

ANALYTICAL SUMMARY REPORT



July 13, 2016

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Work Order: H16070035

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 3 samples for Hydrometrics Inc on 7/5/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16070035-001	CHHL-1606-100	06/30/16 15:35	07/05/16	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H16070035-002	CHHL-1606-101	06/30/16 16:00	07/05/16	Aqueous	Same As Above
H16070035-003	TB 5655	06/30/16 15:35	07/05/16	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Amanda Carlson
Assistant Laboratory Manager-Helena,MT

Digitally signed by
Amanda B. Carlson
Date: 2016.07.13 14:08:13 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16070035-001
Client Sample ID: CHHL-1606-100

Sprinkler

Report Date: 07/13/16
Collection Date: 06/30/16 15:35
DateReceived: 07/05/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/11/16 12:40 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	07/11/16 12:40 / kjw
Benzene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/11/16 12:40 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/11/16 12:40 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/11/16 12:40 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/11/16 12:40 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/11/16 12:40 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	07/11/16 12:40 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	07/11/16 12:40 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/11/16 12:40 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/11/16 12:40 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Styrene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Toluene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level.
QCL - Quality control limit. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16070035-001
Client Sample ID: CHHL-1606-100

Report Date: 07/13/16
Collection Date: 06/30/16 15:35
DateReceived: 07/05/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/11/16 12:40 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	07/11/16 12:40 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/11/16 12:40 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/11/16 12:40 / kjw
Surr: 1,2-Dichloroethane-d4	98.0	%REC		70-130		SW8260B	07/11/16 12:40 / kjw
Surr: Dibromofluoromethane	101	%REC		77-126		SW8260B	07/11/16 12:40 / kjw
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	07/11/16 12:40 / kjw
Surr: Toluene-d8	84.0	%REC		79-122		SW8260B	07/11/16 12:40 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16070035-002
Client Sample ID: CHHL-1606-101

Pond

Report Date: 07/13/16
Collection Date: 06/30/16 16:00
DateReceived: 07/05/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/11/16 13:14 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	07/11/16 13:14 / kjw
Benzene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/11/16 13:14 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Chloroform	0.29	ug/L	J	0.50		SW8260B	07/11/16 13:14 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/11/16 13:14 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/11/16 13:14 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,1-Dichloroethane	0.21	ug/L	J	0.50		SW8260B	07/11/16 13:14 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/11/16 13:14 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/11/16 13:14 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	07/11/16 13:14 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	07/11/16 13:14 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/11/16 13:14 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/11/16 13:14 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Styrene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Tetrachloroethene	0.56	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Toluene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Trichloroethene	0.13	ug/L	J	0.50		SW8260B	07/11/16 13:14 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16070035-002
Client Sample ID: CHHL-1606-101

Report Date: 07/13/16
Collection Date: 06/30/16 16:00
DateReceived: 07/05/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/11/16 13:14 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	07/11/16 13:14 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/11/16 13:14 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/11/16 13:14 / kjw
Surr: 1,2-Dichloroethane-d4	95.0	%REC		70-130		SW8260B	07/11/16 13:14 / kjw
Surr: Dibromofluoromethane	100	%REC		77-126		SW8260B	07/11/16 13:14 / kjw
Surr: p-Bromofluorobenzene	103	%REC		76-127		SW8260B	07/11/16 13:14 / kjw
Surr: Toluene-d8	90.0	%REC		79-122		SW8260B	07/11/16 13:14 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16070035-003
Client Sample ID: TB 5655

Report Date: 07/13/16
Collection Date: 06/30/16 15:35
DateReceived: 07/05/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/11/16 11:34 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	07/11/16 11:34 / kjw
Benzene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/11/16 11:34 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/11/16 11:34 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/11/16 11:34 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/11/16 11:34 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	07/11/16 11:34 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	07/11/16 11:34 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	07/11/16 11:34 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/11/16 11:34 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/11/16 11:34 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Styrene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Toluene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16070035-003
Client Sample ID: TB 5655

Report Date: 07/13/16
Collection Date: 06/30/16 15:35
DateReceived: 07/05/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/11/16 11:34 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	07/11/16 11:34 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/11/16 11:34 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/11/16 11:34 / kjw
Surr: 1,2-Dichloroethane-d4	87.0	%REC		70-130		SW8260B	07/11/16 11:34 / kjw
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	07/11/16 11:34 / kjw
Surr: p-Bromofluorobenzene	107	%REC		76-127		SW8260B	07/11/16 11:34 / kjw
Surr: Toluene-d8	88.0	%REC		79-122		SW8260B	07/11/16 11:34 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 07/13/16
Project: 1273 City of Helena
Work Order: H16070035

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R116650	
Lab ID: 071116_CCV_2	54	Continuing Calibration Verification Standard							07/11/16 08:09	
trans-1,4-Dichloro-2-butene		3.56	ug/L	0.50	71	70	130			
Acetone		35.9	ug/L	10	72	70	130			
Acrylonitrile		35.8	ug/L	20	72	70	130			
Benzene		4.76	ug/L	0.50	95	70	130			
Bromochloromethane		4.16	ug/L	0.50	83	70	130			
Bromodichloromethane		4.88	ug/L	0.50	98	70	130			
Bromoform		4.24	ug/L	0.50	85	70	130			
Bromomethane		4.24	ug/L	0.50	85	70	130			
Carbon disulfide		4.76	ug/L	0.50	95	70	130			
Carbon tetrachloride		4.76	ug/L	0.50	95	70	130			
Chlorobenzene		5.60	ug/L	0.50	112	70	130			
Chlorodibromomethane		4.68	ug/L	0.50	94	70	130			
Chloroethane		5.08	ug/L	0.50	102	70	130			
Chloroform		4.44	ug/L	0.50	89	80	120			
Chloromethane		4.12	ug/L	0.50	82	70	130			
1,2-Dibromo-3-chloropropane		4.16	ug/L	0.50	83	70	130			
1,2-Dibromoethane		4.52	ug/L	0.50	90	70	130			
Dibromomethane		4.84	ug/L	0.50	97	70	130			
1,2-Dichlorobenzene		4.96	ug/L	0.50	99	70	130			
1,4-Dichlorobenzene		4.52	ug/L	0.50	90	70	130			
Dichlorodifluoromethane		4.64	ug/L	0.50	93	70	130			
1,1-Dichloroethane		4.72	ug/L	0.50	94	70	130			
1,2-Dichloroethane		3.74	ug/L	0.50	75	70	130			
1,1-Dichloroethene		4.72	ug/L	0.50	94	80	120			
cis-1,2-Dichloroethene		4.72	ug/L	0.50	94	70	130			
trans-1,2-Dichloroethene		4.84	ug/L	0.50	97	70	130			
1,2-Dichloropropane		4.84	ug/L	0.50	97	80	120			
cis-1,3-Dichloropropene		5.04	ug/L	0.50	101	70	130			
trans-1,3-Dichloropropene		4.48	ug/L	0.50	90	70	130			
Ethylbenzene		5.40	ug/L	0.50	108	80	120			
2-Hexanone		37.4	ug/L	10	75	70	130			
Iodomethane		4.60	ug/L	0.50	92	70	130			
Methyl ethyl ketone		36.0	ug/L	10	72	70	130			
Methyl isobutyl ketone		43.2	ug/L	10	86	70	130			
Methylene chloride		3.71	ug/L	0.50	74	70	130			
Styrene		5.08	ug/L	0.50	102	70	130			
1,1,1,2-Tetrachloroethane		5.52	ug/L	0.50	110	70	130			
1,1,2,2-Tetrachloroethane		4.60	ug/L	0.50	92	70	130			
Tetrachloroethene		5.68	ug/L	0.50	114	70	130			
Toluene		5.32	ug/L	0.50	106	80	120			
1,1,1-Trichloroethane		4.72	ug/L	0.50	94	70	130			
1,1,2-Trichloroethane		4.60	ug/L	0.50	92	70	130			
Trichloroethene		5.20	ug/L	0.50	104	70	130			
Trichlorofluoromethane		4.72	ug/L	0.50	94	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/13/16
Work Order: H16070035

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R116650	
Lab ID: 071116_CCV_2	54	Continuing Calibration Verification Standard							07/11/16 08:09	
1,2,3-Trichloropropane		4.44	ug/L	0.50	89	70	130			
Vinyl acetate		3.53	ug/L	0.50	71	70	130			
Vinyl chloride		4.56	ug/L	0.50	91	80	120			
m+p-Xylenes		10.7	ug/L	0.50	107	70	130			
o-Xylene		5.56	ug/L	0.50	111	70	130			
Xylenes, Total		16.2	ug/L	0.50	108	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	90	69	131			
Surr: Dibromofluoromethane				1.0	96	70	125			
Surr: p-Bromofluorobenzene				1.0	93	76	123			
Surr: Toluene-d8				1.0	102	80	119			
Method: SW8260B									Batch: R116650	
Lab ID: 071116_LCS_4	54	Laboratory Control Sample				Run: 1SATURN_160711A			07/11/16 09:45	
trans-1,4-Dichloro-2-butene		3.35	ug/L	0.50	67	67	132			
Acetone		33.0	ug/L	10	66	55	144			
Acrylonitrile		40.4	ug/L	20	81	63	134			
Benzene		4.60	ug/L	0.50	92	69	129			
Bromochloromethane		3.99	ug/L	0.50	80	72	125			
Bromodichloromethane		4.44	ug/L	0.50	89	71	122			
Bromoform		3.69	ug/L	0.50	74	65	130			
Bromomethane		4.56	ug/L	0.50	91	60	136			
Carbon disulfide		4.56	ug/L	0.50	91	71	135			
Carbon tetrachloride		4.36	ug/L	0.50	87	77	121			
Chlorobenzene		5.44	ug/L	0.50	109	78	120			
Chlorodibromomethane		4.60	ug/L	0.50	92	70	122			
Chloroethane		4.44	ug/L	0.50	89	62	135			
Chloroform		4.16	ug/L	0.50	83	71	121			
Chloromethane		4.88	ug/L	0.50	98	66	139			
1,2-Dibromo-3-chloropropane		4.00	ug/L	0.50	80	59	130			
1,2-Dibromoethane		4.84	ug/L	0.50	97	60	137			
Dibromomethane		4.92	ug/L	0.50	98	69	122			
1,2-Dichlorobenzene		4.60	ug/L	0.50	92	74	122			
1,4-Dichlorobenzene		4.40	ug/L	0.50	88	75	122			
Dichlorodifluoromethane		5.08	ug/L	0.50	102	57	144			
1,1-Dichloroethane		4.08	ug/L	0.50	82	76	125			
1,2-Dichloroethane		3.46	ug/L	0.50	69	69	131			
1,1-Dichloroethene		4.16	ug/L	0.50	83	67	129			
cis-1,2-Dichloroethene		4.12	ug/L	0.50	82	75	122			
trans-1,2-Dichloroethene		4.56	ug/L	0.50	91	75	124			
1,2-Dichloropropane		4.40	ug/L	0.50	88	75	127			
cis-1,3-Dichloropropene		4.80	ug/L	0.50	96	73	124			
trans-1,3-Dichloropropene		4.08	ug/L	0.50	82	72	127			
Ethylbenzene		5.32	ug/L	0.50	106	74	125			
2-Hexanone		35.5	ug/L	10	71	70	128			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/13/16
Work Order: H16070035

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R116650
Lab ID: 071116_LCS_4	54	Laboratory Control Sample				Run: 1SATURN_160711A				07/11/16 09:45
Iodomethane		4.40	ug/L	0.50	88	52	130			
Methyl ethyl ketone		33.4	ug/L	10	67	56	141			
Methyl isobutyl ketone		41.2	ug/L	10	82	71	121			
Methylene chloride		3.34	ug/L	0.50	67	61	125			
Styrene		4.72	ug/L	0.50	94	75	120			
1,1,1,2-Tetrachloroethane		5.16	ug/L	0.50	103	76	122			
1,1,2,2-Tetrachloroethane		4.40	ug/L	0.50	88	67	124			
Tetrachloroethene		5.40	ug/L	0.50	108	75	126			
Toluene		5.00	ug/L	0.50	100	73	122			
1,1,1-Trichloroethane		4.56	ug/L	0.50	91	76	124			
1,1,2-Trichloroethane		4.40	ug/L	0.50	88	72	125			
Trichloroethene		5.08	ug/L	0.50	102	72	126			
Trichlorofluoromethane		4.68	ug/L	0.50	94	73	131			
1,2,3-Trichloropropane		4.52	ug/L	0.50	90	58	142			
Vinyl acetate		4.80	ug/L	0.50	96	47	154			
Vinyl chloride		4.64	ug/L	0.50	93	69	129			
m+p-Xylenes		10.2	ug/L	0.50	102	72	124			
o-Xylene		5.24	ug/L	0.50	105	74	123			
Xylenes, Total		15.4	ug/L	0.50	103	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	82	69	131			
Surr: Dibromofluoromethane				1.0	89	70	125			
Surr: p-Bromofluorobenzene				1.0	93	76	123			
Surr: Toluene-d8				1.0	102	80	119			
Lab ID: 071116_MBLK_6	54	Method Blank				Run: 1SATURN_160711A				07/11/16 10:59
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Acetone		ND	ug/L	10						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/13/16
Work Order: H16070035

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R116650	
Lab ID: 071116_MBLK_6	54 Method Blank					Run: 1SATURN_160711A			07/11/16 10:59	
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	88	69	131			
Surr: Dibromofluoromethane				1.0	95	70	125			
Surr: p-Bromofluorobenzene				1.0	105	76	123			
Surr: Toluene-d8				1.0	92	80	119			
Lab ID: H16070088-003DMS	54 Sample Matrix Spike					Run: 1SATURN_160711A			07/11/16 18:47	
trans-1,4-Dichloro-2-butene		7.75	ug/L	1.0	78	67	132			
Acetone		79.8	ug/L	20	80	55	144			
Acrylonitrile		92.8	ug/L	40	93	63	134			
Benzene		9.28	ug/L	1.0	93	69	129			
Bromochloromethane		8.24	ug/L	1.0	82	72	125			
Bromodichloromethane		9.28	ug/L	1.0	93	71	122			
Bromoform		8.80	ug/L	1.0	88	65	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 07/13/16
Project: 1273 City of Helena
Work Order: H16070035

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R116650	
Lab ID: H16070088-003DMS	54	Sample Matrix Spike				Run: 1SATURN_160711A			07/11/16 18:47	
Bromomethane		7.80	ug/L	1.0	78	60	136			
Carbon disulfide		9.44	ug/L	1.0	94	71	135			
Carbon tetrachloride		8.96	ug/L	1.0	90	77	121			
Chlorobenzene		11.0	ug/L	1.0	110	78	120			
Chlorodibromomethane		9.28	ug/L	1.0	93	70	122			
Chloroethane		9.36	ug/L	1.0	94	62	135			
Chloroform		9.04	ug/L	1.0	90	71	121			
Chloromethane		10.4	ug/L	1.0	86	66	139			
1,2-Dibromo-3-chloropropane		8.32	ug/L	1.0	83	59	130			
1,2-Dibromoethane		9.84	ug/L	1.0	98	60	137			
Dibromomethane		10.2	ug/L	1.0	102	69	122			
1,2-Dichlorobenzene		9.12	ug/L	1.0	91	74	122			
1,4-Dichlorobenzene		8.56	ug/L	1.0	86	75	122			
Dichlorodifluoromethane		10.5	ug/L	1.0	101	57	144			
1,1-Dichloroethane		8.24	ug/L	1.0	80	76	125			
1,2-Dichloroethane		8.00	ug/L	1.0	80	69	131			
1,1-Dichloroethene		8.64	ug/L	1.0	86	67	129			
cis-1,2-Dichloroethene		9.12	ug/L	1.0	87	75	122			
trans-1,2-Dichloroethene		8.96	ug/L	1.0	90	75	124			
1,2-Dichloropropane		8.96	ug/L	1.0	90	75	127			
cis-1,3-Dichloropropene		9.84	ug/L	1.0	98	73	124			
trans-1,3-Dichloropropene		8.56	ug/L	1.0	86	72	127			
Ethylbenzene		10.0	ug/L	1.0	100	74	125			
2-Hexanone		96.8	ug/L	20	97	70	128			
Iodomethane		8.88	ug/L	1.0	89	52	130			
Methyl ethyl ketone		87.2	ug/L	20	87	56	141			
Methyl isobutyl ketone		105	ug/L	20	105	71	121			
Methylene chloride		7.36	ug/L	1.0	74	61	125			
Styrene		9.68	ug/L	1.0	97	75	120			
1,1,1,2-Tetrachloroethane		10.5	ug/L	1.0	105	76	122			
1,1,2,2-Tetrachloroethane		9.52	ug/L	1.0	95	67	124			
Tetrachloroethene		11.3	ug/L	1.0	94	75	126			
Toluene		9.52	ug/L	1.0	95	73	122			
1,1,1-Trichloroethane		9.36	ug/L	1.0	94	76	124			
1,1,2-Trichloroethane		9.60	ug/L	1.0	96	72	125			
Trichloroethene		10.0	ug/L	1.0	96	72	126			
Trichlorofluoromethane		12.8	ug/L	1.0	88	73	131			
1,2,3-Trichloropropane		10.4	ug/L	1.0	104	58	142			
Vinyl acetate		11.5	ug/L	1.0	115	47	154			
Vinyl chloride		9.28	ug/L	1.0	93	69	129			
m+p-Xylenes		20.1	ug/L	1.0	100	72	124			
o-Xylene		10.5	ug/L	1.0	105	74	123			
Xylenes, Total		30.6	ug/L	1.0	102	72	124			
Surr: 1,2-Dichloroethane-d4				2.0	97	69	131			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 07/13/16
Project: 1273 City of Helena
Work Order: H16070035

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R116650	
Lab ID: H16070088-003DMS	54	Sample Matrix Spike				Run: 1SATURN_160711A			07/11/16 18:47	
Surr: Dibromofluoromethane				2.0	100	70	125			
Surr: p-Bromofluorobenzene				2.0	87	76	123			
Surr: Toluene-d8				2.0	97	80	119			
- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.										
Lab ID: H16070088-003DMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_160711A			07/11/16 19:21	
trans-1,4-Dichloro-2-butene		7.70	ug/L	1.0	77	67	132	0.6	20	
Acetone		79.3	ug/L	20	79	55	144	0.6	20	
Acrylonitrile		88.8	ug/L	40	89	63	134	4.4	20	
Benzene		9.44	ug/L	1.0	94	69	129	1.7	20	
Bromochloromethane		8.16	ug/L	1.0	82	72	125	1.0	20	
Bromodichloromethane		8.80	ug/L	1.0	88	71	122	5.3	20	
Bromoform		7.27	ug/L	1.0	73	65	130	19	20	
Bromomethane		8.72	ug/L	1.0	87	60	136	11	20	
Carbon disulfide		9.44	ug/L	1.0	94	71	135	0.0	20	
Carbon tetrachloride		8.80	ug/L	1.0	88	77	121	1.8	20	
Chlorobenzene		10.8	ug/L	1.0	108	78	120	1.5	20	
Chlorodibromomethane		9.44	ug/L	1.0	94	70	122	1.7	20	
Chloroethane		8.96	ug/L	1.0	90	62	135	4.4	20	
Chloroform		8.88	ug/L	1.0	89	71	121	1.8	20	
Chloromethane		10.3	ug/L	1.0	85	66	139	0.8	20	
1,2-Dibromo-3-chloropropane		8.16	ug/L	1.0	82	59	130	1.9	20	
1,2-Dibromoethane		9.92	ug/L	1.0	99	60	137	0.8	20	
Dibromomethane		9.84	ug/L	1.0	98	69	122	4.0	20	
1,2-Dichlorobenzene		8.88	ug/L	1.0	89	74	122	2.7	20	
1,4-Dichlorobenzene		8.64	ug/L	1.0	86	75	122	0.9	20	
Dichlorodifluoromethane		10.5	ug/L	1.0	101	57	144	0.0	20	
1,1-Dichloroethane		8.80	ug/L	1.0	85	76	125	6.6	20	
1,2-Dichloroethane		8.00	ug/L	1.0	80	69	131	0.0	20	
1,1-Dichloroethene		8.48	ug/L	1.0	85	67	129	1.9	20	
cis-1,2-Dichloroethene		9.20	ug/L	1.0	88	75	122	0.9	20	
trans-1,2-Dichloroethene		8.96	ug/L	1.0	90	75	124	0.0	20	
1,2-Dichloropropane		8.96	ug/L	1.0	90	75	127	0.0	20	
cis-1,3-Dichloropropene		9.76	ug/L	1.0	98	73	124	0.8	20	
trans-1,3-Dichloropropene		8.40	ug/L	1.0	84	72	127	1.9	20	
Ethylbenzene		9.92	ug/L	1.0	99	74	125	0.8	20	
2-Hexanone		100	ug/L	20	100	70	128	3.3	20	
Iodomethane		8.96	ug/L	1.0	90	52	130	0.9	20	
Methyl ethyl ketone		89.6	ug/L	20	90	56	141	2.7	20	
Methyl isobutyl ketone		102	ug/L	20	102	71	121	2.3	20	
Methylene chloride		7.47	ug/L	1.0	75	61	125	1.5	20	
Styrene		9.76	ug/L	1.0	98	75	120	0.8	20	
1,1,1,2-Tetrachloroethane		10.2	ug/L	1.0	102	76	122	2.3	20	
1,1,2,2-Tetrachloroethane		9.52	ug/L	1.0	95	67	124	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 07/13/16
Project: 1273 City of Helena
Work Order: H16070035

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R116650
Lab ID: H16070088-003DMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_160711A			07/11/16 19:21	
Tetrachloroethene		11.8	ug/L	1.0	99	75	126	4.2	20	
Toluene		9.44	ug/L	1.0	94	73	122	0.8	20	
1,1,1-Trichloroethane		9.44	ug/L	1.0	94	76	124	0.9	20	
1,1,2-Trichloroethane		9.60	ug/L	1.0	96	72	125	0.0	20	
Trichloroethene		9.68	ug/L	1.0	93	72	126	3.3	20	
Trichlorofluoromethane		13.9	ug/L	1.0	99	73	131	8.4	20	
1,2,3-Trichloropropane		9.68	ug/L	1.0	97	58	142	7.2	20	
Vinyl acetate		11.7	ug/L	1.0	117	47	154	1.4	20	
Vinyl chloride		9.60	ug/L	1.0	96	69	129	3.4	20	
m+p-Xylenes		19.0	ug/L	1.0	95	72	124	5.7	20	
o-Xylene		10.2	ug/L	1.0	102	74	123	2.3	20	
Xylenes, Total		29.2	ug/L	1.0	97	72	124	4.6	20	
Surr: 1,2-Dichloroethane-d4				2.0	101	69	131			
Surr: Dibromofluoromethane				2.0	104	70	125			
Surr: p-Bromofluorobenzene				2.0	86	76	123			
Surr: Toluene-d8				2.0	95	80	119			

- 2-Chloroethyl vinyl ether will degrade in acid-preserved samples.

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

Hydrometrics Inc

H16070035

Login completed by: Tracy L. Lorash
Date Received: 7/5/2016

Reviewed by: BL2000\sdull
Received by: bjs

Reviewed Date: 7/6/2016
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	0.7°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Applicable ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

No collection date or time on one vial for sample 101. Logged in with date and time from COC. tl 7/5/16

Hydrometrics, Inc.

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

CHAIN OF CUSTODY RECORD

H160700035

PROJ. NO.	PROJECT NAME
1273-600	C.O.H. - SPRINKLER / POND

SAMPLERS: *(Signature)*

DATE	TIME	COMP	GRAB	SAMPLE NUMBER	NO. OF CON-TAINERS	Commons UF / RAW	Nutrients UF / H_2SO_4	Diss. Metal F / HNO_3	CN UF / NaOH	Total Metals UF / HNO_3	Total Recoverable Metals UF / HNO_3	BTEX	TPH	8260 LONG LIST / UF / HCl	REMARKS
6/30/16	15:35		X	CHHL - 1606 - 100	3									X	- 0.0005 DETECTION LIMIT
6/30/16	16:00		X	CHHL - 1606 - 101	3									X	

Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Lab	P.O. #	Shipped via: Bus FedEx UPS
	7/5/16 08:56		ENERGY LABS - HELENA	HLN 11724	Other HAND DELIVERED
					Air Bill #

Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Remarks
			0.7 to cooler on ice / hand del.

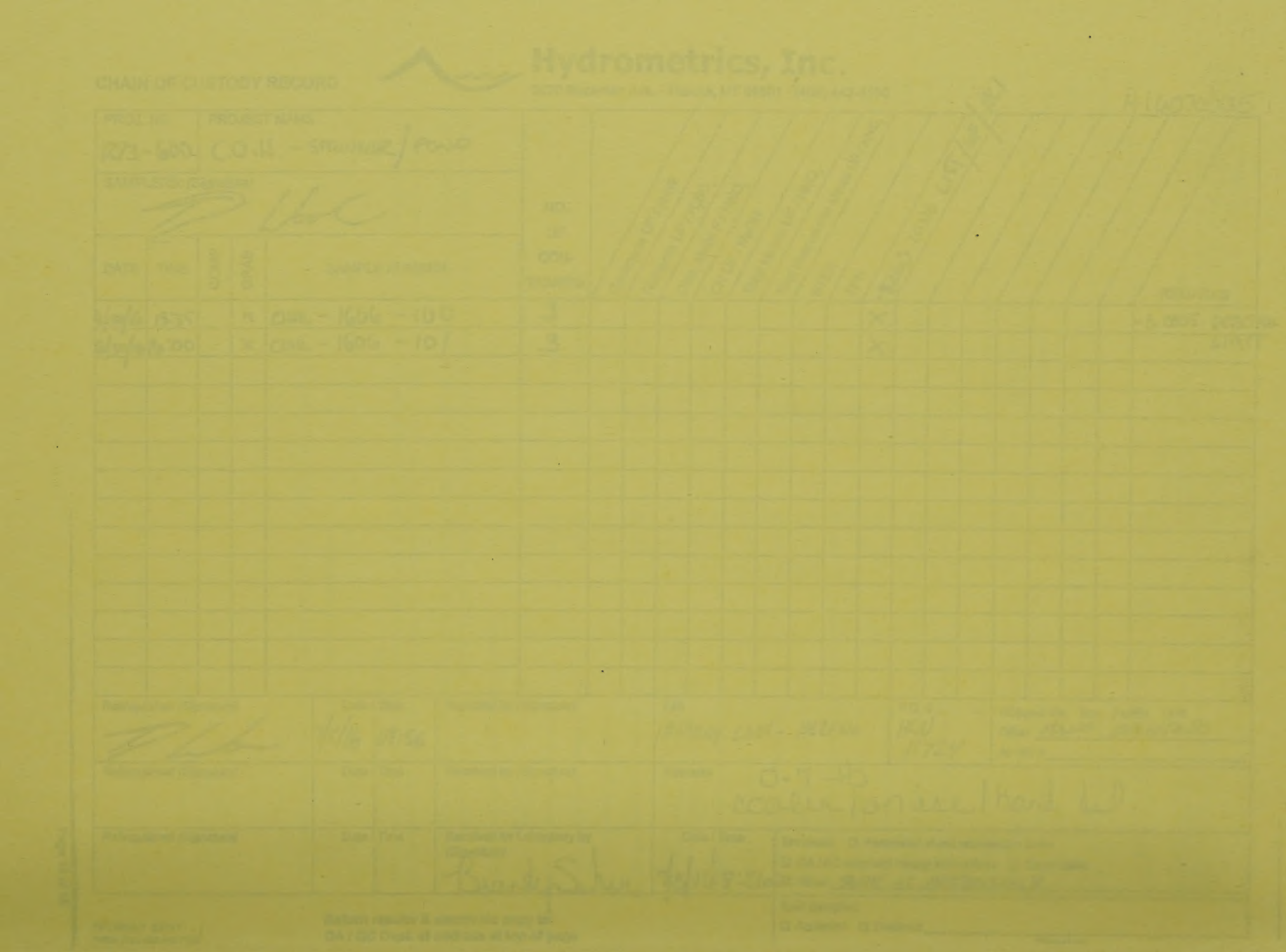
Relinquished *(Signature)*	Date / Time	Received for Laboratory by *(Signature)*	Date / Time
		Brandy Schur	7/5/16 8:56

Enclosed: ☐ Parameter sheet w/detection limits
☐ QA / AC standard mixing instructions ☐ Cover letter
☒ Other SAME AS HISTORICALLY

Split Samples:
☐ Accepted ☐ Declined _____
Signature

Return results & electronic copy to:
QA / QC Dept. at address at top of page

HFORM-1 07/11
Action Print 406-442-7595



Site	Sample Code #	Date	Time	Bottles
Sprinkler	CHHL-	7/29/16	1245	3/nF/HCl/voc/40
	1607-			1/Trip Blank
	100			

Weather: 85°, Calm, Partly Cloudy

Site	Time	Hours	Flow	Totalizer
HL-99-1	1215	2422.2	16.33	479875
				163130
HL-99-2	1220	2422.7	16.11	858182
				239083
HL-99-3	1230	2131.2	27.56	271117
				183441

ENERGY LABORATORIES
Trust our People. Trust our Data.
www.energylab.com
Billings, MT 800.735.4489 • Casper, WY 888.235.0515
College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

ANALYTICAL SUMMARY REPORT

August 03, 2016

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Work Order: H16080006

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 2 samples for Hydrometrics Inc on 8/1/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16080006-001	CHHL-1607-100	07/29/16 12:45	08/01/16	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H16080006-002	TB 5690	07/29/16 12:45	08/01/16	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Amanda Carlson
Assistant Laboratory Manager-Helena,MT

Digitally signed by
Amanda B. Carlson
Date: 2016.08.03 11:59:19 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080006-001
Client Sample ID: CHHL-1607-100

Report Date: 08/03/16
Collection Date: 07/29/16 12:45
DateReceived: 08/01/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	08/02/16 13:12 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	08/02/16 13:12 / kjw
Benzene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	08/02/16 13:12 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	08/02/16 13:12 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	08/02/16 13:12 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/02/16 13:12 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/02/16 13:12 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	08/02/16 13:12 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	08/02/16 13:12 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	08/02/16 13:12 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	08/02/16 13:12 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Styrene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Toluene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080006-001
Client Sample ID: CHHL-1607-100

Report Date: 08/03/16
Collection Date: 07/29/16 12:45
DateReceived: 08/01/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	08/02/16 13:12 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	08/02/16 13:12 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	08/02/16 13:12 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	08/02/16 13:12 / kjw
Surr: 1,2-Dichloroethane-d4	98.0	%REC		70-130		SW8260B	08/02/16 13:12 / kjw
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	08/02/16 13:12 / kjw
Surr: p-Bromofluorobenzene	110	%REC		76-127		SW8260B	08/02/16 13:12 / kjw
Surr: Toluene-d8	93.0	%REC		79-122		SW8260B	08/02/16 13:12 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080006-002
Client Sample ID: TB 5690

Report Date: 08/03/16
Collection Date: 07/29/16 12:45
DateReceived: 08/01/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	08/02/16 12:39 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	08/02/16 12:39 / kjw
Benzene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	08/02/16 12:39 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	08/02/16 12:39 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	08/02/16 12:39 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/02/16 12:39 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/02/16 12:39 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	08/02/16 12:39 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	08/02/16 12:39 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	08/02/16 12:39 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	08/02/16 12:39 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Styrene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Toluene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080006-002
Client Sample ID: TB 5690

Report Date: 08/03/16
Collection Date: 07/29/16 12:45
DateReceived: 08/01/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	08/02/16 12:39 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	08/02/16 12:39 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	08/02/16 12:39 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	08/02/16 12:39 / kjw
Surr: 1,2-Dichloroethane-d4	94.0	%REC		70-130		SW8260B	08/02/16 12:39 / kjw
Surr: Dibromofluoromethane	105	%REC		77-126		SW8260B	08/02/16 12:39 / kjw
Surr: p-Bromofluorobenzene	108	%REC		76-127		SW8260B	08/02/16 12:39 / kjw
Surr: Toluene-d8	94.0	%REC		79-122		SW8260B	08/02/16 12:39 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/03/16
Project: 1273 City of Helena
Work Order: H16080006

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R117283
Lab ID: 080216_CCV_3	54	Continuing Calibration Verification Standard								08/02/16 10:20
trans-1,4-Dichloro-2-butene		3.76	ug/L	0.50	75	70	130			
Acetone		40.4	ug/L	10	81	70	130			
Acrylonitrile		43.2	ug/L	20	86	70	130			
Benzene		4.84	ug/L	0.50	97	70	130			
Bromochloromethane		4.36	ug/L	0.50	87	70	130			
Bromodichloromethane		4.84	ug/L	0.50	97	70	130			
Bromoform		3.94	ug/L	0.50	79	70	130			
Bromomethane		5.40	ug/L	0.50	108	70	130			
Carbon disulfide		5.16	ug/L	0.50	103	70	130			
Carbon tetrachloride		4.64	ug/L	0.50	93	70	130			
Chlorobenzene		5.28	ug/L	0.50	106	70	130			
Chlorodibromomethane		4.52	ug/L	0.50	90	70	130			
Chloroethane		5.24	ug/L	0.50	105	70	130			
Chloroform		4.44	ug/L	0.50	89	80	120			
Chloromethane		4.56	ug/L	0.50	91	70	130			
1,2-Dibromo-3-chloropropane		4.56	ug/L	0.50	91	70	130			
1,2-Dibromoethane		4.76	ug/L	0.50	95	70	130			
Dibromomethane		4.80	ug/L	0.50	96	70	130			
1,2-Dichlorobenzene		4.72	ug/L	0.50	94	70	130			
1,4-Dichlorobenzene		4.28	ug/L	0.50	86	70	130			
Dichlorodifluoromethane		4.84	ug/L	0.50	97	70	130			
1,1-Dichloroethane		4.56	ug/L	0.50	91	70	130			
1,2-Dichloroethane		4.20	ug/L	0.50	84	70	130			
1,1-Dichloroethene		4.80	ug/L	0.50	96	80	120			
cis-1,2-Dichloroethene		4.72	ug/L	0.50	94	70	130			
trans-1,2-Dichloroethene		4.84	ug/L	0.50	97	70	130			
1,2-Dichloropropane		4.56	ug/L	0.50	91	80	120			
cis-1,3-Dichloropropene		4.92	ug/L	0.50	98	70	130			
trans-1,3-Dichloropropene		4.56	ug/L	0.50	91	70	130			
Ethylbenzene		5.16	ug/L	0.50	103	80	120			
2-Hexanone		43.2	ug/L	10	86	70	130			
Iodomethane		5.12	ug/L	0.50	102	70	130			
Methyl ethyl ketone		41.2	ug/L	10	82	70	130			
Methyl isobutyl ketone		49.6	ug/L	10	99	70	130			
Methylene chloride		3.63	ug/L	0.50	73	70	130			
Styrene		4.92	ug/L	0.50	98	70	130			
1,1,1,2-Tetrachloroethane		4.80	ug/L	0.50	96	70	130			
1,1,2,2-Tetrachloroethane		4.60	ug/L	0.50	92	70	130			
Tetrachloroethene		5.12	ug/L	0.50	102	70	130			
Toluene		4.88	ug/L	0.50	98	80	120			
1,1,1-Trichloroethane		4.76	ug/L	0.50	95	70	130			
1,1,2-Trichloroethane		4.40	ug/L	0.50	88	70	130			
Trichloroethene		5.00	ug/L	0.50	100	70	130			
Trichlorofluoromethane		5.08	ug/L	0.50	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/03/16
Project: 1273 City of Helena
Work Order: H16080006

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R117283
Lab ID: 080216_CCV_3	54	Continuing Calibration Verification Standard								08/02/16 10:20
1,2,3-Trichloropropane		4.36	ug/L	0.50	87	70	130			
Vinyl acetate		3.76	ug/L	0.50	75	70	130			
Vinyl chloride		4.80	ug/L	0.50	96	80	120			
m+p-Xylenes		9.96	ug/L	0.50	100	70	130			
o-Xylene		5.12	ug/L	0.50	102	70	130			
Xylenes, Total		15.1	ug/L	0.50	101	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	94	69	131			
Surr: Dibromofluoromethane				1.0	108	70	125			
Surr: p-Bromofluorobenzene				1.0	91	76	123			
Surr: Toluene-d8				1.0	98	80	119			
Method: SW8260B										Batch: R117283
Lab ID: 080216_LCS_4	54	Laboratory Control Sample				Run: 1SATURN_160802A				08/02/16 10:58
trans-1,4-Dichloro-2-butene		3.67	ug/L	0.50	73	67	132			
Acetone		37.1	ug/L	10	74	55	144			
Acrylonitrile		41.2	ug/L	20	82	63	134			
Benzene		4.64	ug/L	0.50	93	69	129			
Bromochloromethane		4.08	ug/L	0.50	82	72	125			
Bromodichloromethane		4.84	ug/L	0.50	97	71	122			
Bromoform		3.80	ug/L	0.50	76	65	130			
Bromomethane		5.76	ug/L	0.50	115	60	136			
Carbon disulfide		4.72	ug/L	0.50	94	71	135			
Carbon tetrachloride		4.40	ug/L	0.50	88	77	121			
Chlorobenzene		5.64	ug/L	0.50	113	78	120			
Chlorodibromomethane		4.84	ug/L	0.50	97	70	122			
Chloroethane		5.12	ug/L	0.50	102	62	135			
Chloroform		4.32	ug/L	0.50	86	71	121			
Chloromethane		5.36	ug/L	0.50	107	66	139			
1,2-Dibromo-3-chloropropane		4.08	ug/L	0.50	82	59	130			
1,2-Dibromoethane		5.12	ug/L	0.50	102	60	137			
Dibromomethane		4.96	ug/L	0.50	99	69	122			
1,2-Dichlorobenzene		4.48	ug/L	0.50	90	74	122			
1,4-Dichlorobenzene		4.36	ug/L	0.50	87	75	122			
Dichlorodifluoromethane		4.36	ug/L	0.50	87	57	144			
1,1-Dichloroethane		4.28	ug/L	0.50	86	76	125			
1,2-Dichloroethane		3.91	ug/L	0.50	78	69	131			
1,1-Dichloroethene		4.48	ug/L	0.50	90	67	129			
cis-1,2-Dichloroethene		4.48	ug/L	0.50	90	75	122			
trans-1,2-Dichloroethene		4.64	ug/L	0.50	93	75	124			
1,2-Dichloropropane		4.48	ug/L	0.50	90	75	127			
cis-1,3-Dichloropropene		5.32	ug/L	0.50	106	73	124			
trans-1,3-Dichloropropene		4.40	ug/L	0.50	88	72	127			
Ethylbenzene		5.36	ug/L	0.50	107	74	125			
2-Hexanone		43.2	ug/L	10	86	70	128			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/03/16
Project: 1273 City of Helena
Work Order: H16080006

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R117283
Lab ID: 080216_LCS_4	54	Laboratory Control Sample				Run: 1SATURN_160802A				08/02/16 10:58
Iodomethane		4.36	ug/L	0.50	87	52	130			
Methyl ethyl ketone		41.2	ug/L	10	82	56	141			
Methyl isobutyl ketone		49.6	ug/L	10	99	71	121			
Methylene chloride		3.58	ug/L	0.50	72	61	125			
Styrene		4.88	ug/L	0.50	98	75	120			
1,1,1,2-Tetrachloroethane		5.08	ug/L	0.50	102	76	122			
1,1,2,2-Tetrachloroethane		4.64	ug/L	0.50	93	67	124			
Tetrachloroethene		5.40	ug/L	0.50	108	75	126			
Toluene		5.00	ug/L	0.50	100	73	122			
1,1,1-Trichloroethane		4.64	ug/L	0.50	93	76	124			
1,1,2-Trichloroethane		4.52	ug/L	0.50	90	72	125			
Trichloroethene		4.80	ug/L	0.50	96	72	126			
Trichlorofluoromethane		5.08	ug/L	0.50	102	73	131			
1,2,3-Trichloropropane		4.32	ug/L	0.50	86	58	142			
Vinyl acetate		5.56	ug/L	0.50	111	47	154			
Vinyl chloride		4.68	ug/L	0.50	94	69	129			
m+p-Xylenes		10.5	ug/L	0.50	105	72	124			
o-Xylene		5.56	ug/L	0.50	111	74	123			
Xylenes, Total		16.0	ug/L	0.50	107	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	94	69	131			
Surr: Dibromofluoromethane				1.0	101	70	125			
Surr: p-Bromofluorobenzene				1.0	88	76	123			
Surr: Toluene-d8				1.0	101	80	119			
Lab ID: 080216_MBLK_5	54	Method Blank				Run: 1SATURN_160802A				08/02/16 11:32
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Acetone		ND	ug/L	10						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/03/16
Project: 1273 City of Helena
Work Order: H16080006

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R117283
Lab ID: 080216_MBLK_5	54	Method Blank				Run: 1SATURN_160802A				08/02/16 11:32
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	98	69	131			
Surr: Dibromofluoromethane				1.0	105	70	125			
Surr: p-Bromofluorobenzene				1.0	98	76	123			
Surr: Toluene-d8				1.0	93	80	119			
Lab ID: H16080006-001AMS	54	Sample Matrix Spike				Run: 1SATURN_160802A				08/02/16 18:44
trans-1,4-Dichloro-2-butene		9.20	ug/L	1.0	92	67	132			
Acetone		103	ug/L	20	103	55	144			
Acrylonitrile		113	ug/L	40	113	63	134			
Benzene		10.1	ug/L	1.0	101	69	129			
Bromochloromethane		8.88	ug/L	1.0	89	72	125			
Bromodichloromethane		10.1	ug/L	1.0	101	71	122			
Bromoform		9.36	ug/L	1.0	94	65	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/03/16
Project: 1273 City of Helena
Work Order: H16080006

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R117283	
Lab ID: H16080006-001AMS	54	Sample Matrix Spike				Run: 1SATURN_160802A			08/02/16 18:44	
Bromomethane		11.5	ug/L	1.0	115	60	136			
Carbon disulfide		9.44	ug/L	1.0	94	71	135			
Carbon tetrachloride		9.44	ug/L	1.0	94	77	121			
Chlorobenzene		10.9	ug/L	1.0	109	78	120			
Chlorodibromomethane		10.1	ug/L	1.0	101	70	122			
Chloroethane		8.48	ug/L	1.0	85	62	135			
Chloroform		9.52	ug/L	1.0	95	71	121			
Chloromethane		11.0	ug/L	1.0	110	66	139			
1,2-Dibromo-3-chloropropane		9.44	ug/L	1.0	94	59	130			
1,2-Dibromoethane		11.0	ug/L	1.0	110	60	137			
Dibromomethane		10.6	ug/L	1.0	106	69	122			
1,2-Dichlorobenzene		9.92	ug/L	1.0	99	74	122			
1,4-Dichlorobenzene		8.64	ug/L	1.0	86	75	122			
Dichlorodifluoromethane		8.96	ug/L	1.0	90	57	144			
1,1-Dichloroethane		9.28	ug/L	1.0	93	76	125			
1,2-Dichloroethane		9.92	ug/L	1.0	99	69	131			
1,1-Dichloroethene		9.20	ug/L	1.0	92	67	129			
cis-1,2-Dichloroethene		10.1	ug/L	1.0	101	75	122			
trans-1,2-Dichloroethene		9.84	ug/L	1.0	98	75	124			
1,2-Dichloropropane		9.20	ug/L	1.0	92	75	127			
cis-1,3-Dichloropropene		10.6	ug/L	1.0	106	73	124			
trans-1,3-Dichloropropene		8.88	ug/L	1.0	89	72	127			
Ethylbenzene		10.1	ug/L	1.0	101	74	125			
2-Hexanone		122	ug/L	20	122	70	128			
Iodomethane		9.12	ug/L	1.0	91	52	130			
Methyl ethyl ketone		113	ug/L	20	113	56	141			
Methyl isobutyl ketone		123	ug/L	20	123	71	121			S
Methylene chloride		8.56	ug/L	1.0	86	61	125			
Styrene		10.6	ug/L	1.0	106	75	120			
1,1,1,2-Tetrachloroethane		11.0	ug/L	1.0	110	76	122			
1,1,2,2-Tetrachloroethane		9.44	ug/L	1.0	94	67	124			
Tetrachloroethene		9.36	ug/L	1.0	94	75	126			
Toluene		9.20	ug/L	1.0	92	73	122			
1,1,1-Trichloroethane		10.6	ug/L	1.0	106	76	124			
1,1,2-Trichloroethane		9.76	ug/L	1.0	98	72	125			
Trichloroethene		9.28	ug/L	1.0	93	72	126			
Trichlorofluoromethane		10.2	ug/L	1.0	102	73	131			
1,2,3-Trichloropropane		11.1	ug/L	1.0	111	58	142			
Vinyl acetate		12.6	ug/L	1.0	126	47	154			
Vinyl chloride		9.44	ug/L	1.0	94	69	129			
m+p-Xylenes		19.8	ug/L	1.0	99	72	124			
o-Xylene		10.4	ug/L	1.0	104	74	123			
Xylenes, Total		30.2	ug/L	1.0	101	72	124			
Surr: 1,2-Dichloroethane-d4				2.0	112	69	131			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/03/16
Work Order: H16080006

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R117283	
Lab ID: H16080006-001AMS	54	Sample Matrix Spike				Run: 1SATURN_160802A			08/02/16 18:44	
Surr: Dibromofluoromethane				2.0	101	70	125			
Surr: p-Bromofluorobenzene				2.0	90	76	123			
Surr: Toluene-d8				2.0	102	80	119			
Lab ID: H16080006-001AMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_160802A			08/02/16 19:49	
trans-1,4-Dichloro-2-butene		9.20	ug/L	1.0	92	67	132	0.0	20	
Acetone		107	ug/L	20	107	55	144	3.8	20	
Acrylonitrile		117	ug/L	40	117	63	134	3.5	20	
Benzene		10.2	ug/L	1.0	102	69	129	1.6	20	
Bromochloromethane		9.44	ug/L	1.0	94	72	125	6.1	20	
Bromodichloromethane		10.3	ug/L	1.0	103	71	122	2.4	20	
Bromoform		9.68	ug/L	1.0	97	65	130	3.4	20	
Bromomethane		11.2	ug/L	1.0	112	60	136	2.8	20	
Carbon disulfide		9.52	ug/L	1.0	95	71	135	0.8	20	
Carbon tetrachloride		9.20	ug/L	1.0	92	77	121	2.6	20	
Chlorobenzene		11.4	ug/L	1.0	114	78	120	4.3	20	
Chlorodibromomethane		9.84	ug/L	1.0	98	70	122	2.4	20	
Chloroethane		9.36	ug/L	1.0	94	62	135	9.9	20	
Chloroform		9.92	ug/L	1.0	99	71	121	4.1	20	
Chloromethane		10.9	ug/L	1.0	109	66	139	1.5	20	
1,2-Dibromo-3-chloropropane		9.84	ug/L	1.0	98	59	130	4.1	20	
1,2-Dibromoethane		11.1	ug/L	1.0	111	60	137	1.4	20	
Dibromomethane		11.0	ug/L	1.0	110	69	122	3.0	20	
1,2-Dichlorobenzene		10.1	ug/L	1.0	101	74	122	1.6	20	
1,4-Dichlorobenzene		8.32	ug/L	1.0	83	75	122	3.8	20	
Dichlorodifluoromethane		8.96	ug/L	1.0	90	57	144	0.0	20	
1,1-Dichloroethane		9.20	ug/L	1.0	92	76	125	0.9	20	
1,2-Dichloroethane		10.0	ug/L	1.0	100	69	131	0.8	20	
1,1-Dichloroethene		9.12	ug/L	1.0	91	67	129	0.9	20	
cis-1,2-Dichloroethene		10.2	ug/L	1.0	102	75	122	1.6	20	
trans-1,2-Dichloroethene		10.1	ug/L	1.0	101	75	124	2.4	20	
1,2-Dichloropropane		9.28	ug/L	1.0	93	75	127	0.9	20	
cis-1,3-Dichloropropene		10.6	ug/L	1.0	106	73	124	0.8	20	
trans-1,3-Dichloropropene		9.44	ug/L	1.0	94	72	127	6.1	20	
Ethylbenzene		10.2	ug/L	1.0	102	74	125	1.6	20	
2-Hexanone		141	ug/L	20	141	70	128	15	20	S
Iodomethane		9.20	ug/L	1.0	92	52	130	0.9	20	
Methyl ethyl ketone		118	ug/L	20	118	56	141	4.8	20	
Methyl isobutyl ketone		129	ug/L	20	129	71	121	4.4	20	S
Methylene chloride		8.64	ug/L	1.0	86	61	125	0.9	20	
Styrene		10.9	ug/L	1.0	109	75	120	3.0	20	
1,1,1,2-Tetrachloroethane		11.1	ug/L	1.0	111	76	122	1.4	20	
1,1,2,2-Tetrachloroethane		10.0	ug/L	1.0	100	67	124	5.8	20	
Tetrachloroethene		9.92	ug/L	1.0	99	75	126	5.8	20	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/03/16
Project: 1273 City of Helena
Work Order: H16080006

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R117283	
Lab ID: H16080006-001AMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_160802A			08/02/16 19:49	
Toluene		9.44	ug/L	1.0	94	73	122	2.6	20	
1,1,1-Trichloroethane		10.3	ug/L	1.0	103	76	124	2.3	20	
1,1,2-Trichloroethane		9.84	ug/L	1.0	98	72	125	0.8	20	
Trichloroethene		9.36	ug/L	1.0	94	72	126	0.9	20	
Trichlorofluoromethane		10.2	ug/L	1.0	102	73	131	0.8	20	
1,2,3-Trichloropropane		10.8	ug/L	1.0	108	58	142	2.9	20	
Vinyl acetate		14.1	ug/L	1.0	141	47	154	11	20	
Vinyl chloride		9.60	ug/L	1.0	96	69	129	1.7	20	
m+p-Xylenes		19.8	ug/L	1.0	99	72	124	0.4	20	
o-Xylene		11.0	ug/L	1.0	110	74	123	6.0	20	
Xylenes, Total		30.8	ug/L	1.0	103	72	124	1.8	20	
Surr: 1,2-Dichloroethane-d4				2.0	124	69	131			
Surr: Dibromofluoromethane				2.0	106	70	125			
Surr: p-Bromofluorobenzene				2.0	94	76	123			
Surr: Toluene-d8				2.0	104	80	119			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

Hydrometrics Inc

H16080006

Login completed by: Tracy L. Lorash
Reviewed by: BL2000\rwilliams
Reviewed Date: 8/2/2016

Date Received: 8/1/2016
Received by: TLL
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	1.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Applicable ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

CHAIN OF CUSTODY RECORD

Hydrometrics, Inc.

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

PROJ. NO.	PROJECT NAME
1273	C.O.H.

SAMPLERS: *(Signature)* LZ

DATE	TIME	COMP	GRAB	SAMPLE NUMBER	NO. OF CON-TAINERS	Commons UF / RAW	Nutrients UF / H_2SO_4	Diss. Metal F / HNO_3	CN UF / NaOH	Total Metals UF / HNO_3	Total Recoverable Metals UF / HNO_3	BTEX	TPH	8260 - 0.0005 mg/L - DETECTION LIMIT - LONG LIST	REMARKS
7/29/16	12:45		X	CHNL-1607-100	3									X	H16080006
—	—	—	—	1 TRIP BLANK	1	—	—	—	—	—	—	—	—	—	

Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Lab	P.O. #	Shipped via: Bus FedEx UPS
LZ	8/1/16 1106		ENERGY LABS - HELENA	HLN 11726	Other HAND DELIVERED
Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Remarks		Air Bill #
	8/1/16 11:17		TB 1.6° on ice hand del.		
Relinquished *(Signature)*	Date / Time	Received for Laboratory by *(Signature)*	Date / Time	Enclosed: ☐ Parameter sheet w/detection limits	
			8/1/16 11:17	☐ QA / AC standard mixing instructions ☐ Cover letter	
				☒ Other SAME AS HISTORICALLY	

HFORM-1 07/11
Action Print 406-442-7595

Return results & electronic copy to:
QA / QC Dept. at address at top of page

Split Samples:
☐ Accepted ☐ Declined _____
Signature

Hydrometrics, Inc.

CHAIN OF CUSTODY RECORD

SITE	ICE #	DATE	TIME	BOTTLES
BILL REBORD SPRINKLER	CHHL-1608-100	8/15/16	09:25	3/UF/HCL/VOC 1 TRIP BLANK
BATCH FIELD SPRINKLER	CHHL-1608-101	8/16/16	09:45	

SITE	TIME	HOUR	FLOW	TOTALIZER
HL-99-1	09:04	2899.2	11.61	513162
				196378
HL-99-2	09:08	2899.5	15.50	903561
				284343
HL-99-3	09:13	2608.1	26.22	278873
				260509

ANALYTICAL SUMMARY REPORT

August 31, 2016

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Work Order: H16080480

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 3 samples for Hydrometrics Inc on 8/18/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16080480-001	CHHL-1608-100	08/18/16 9:25	08/18/16	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H16080480-002	CHHL-1608-101	08/18/16 9:45	08/18/16	Aqueous	Same As Above
H16080480-003	TB 5756	08/18/16 9:25	08/18/16	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Amanda Carlson
Assistant Laboratory Manager-Helena,MT

Digitally signed by
Amanda B. Carlson
Date: 2016.08.31 08:11:54 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080480-001
Client Sample ID: CHHL-1608-100

Report Date: 08/31/16
Collection Date: 08/18/16 09:25
DateReceived: 08/18/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	08/29/16 17:02 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	08/29/16 17:02 / kjw
Benzene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	08/29/16 17:02 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	08/29/16 17:02 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	08/29/16 17:02 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/29/16 17:02 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/29/16 17:02 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	08/29/16 17:02 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	08/29/16 17:02 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	08/29/16 17:02 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	08/29/16 17:02 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Styrene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Toluene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080480-001
Client Sample ID: CHHL-1608-100

Report Date: 08/31/16
Collection Date: 08/18/16 09:25
DateReceived: 08/18/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	08/29/16 17:02 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	08/29/16 17:02 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	08/29/16 17:02 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	08/29/16 17:02 / kjw
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	08/29/16 17:02 / kjw
Surr: Dibromofluoromethane	108	%REC		77-126		SW8260B	08/29/16 17:02 / kjw
Surr: p-Bromofluorobenzene	133	%REC	S	76-127		SW8260B	08/29/16 17:02 / kjw
Surr: Toluene-d8	96.0	%REC		79-122		SW8260B	08/29/16 17:02 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080480-002
Client Sample ID: CHHL-1608-101

Report Date: 08/31/16
Collection Date: 08/18/16 09:45
DateReceived: 08/18/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	08/29/16 17:35 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	08/29/16 17:35 / kjw
Benzene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	08/29/16 17:35 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Chloroform	0.67	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	08/29/16 17:35 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	08/29/16 17:35 / kjw
Dichlorodifluoromethane	0.65	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,1-Dichloroethane	1.5	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
cis-1,2-Dichloroethene	0.69	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/29/16 17:35 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/29/16 17:35 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	08/29/16 17:35 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	08/29/16 17:35 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	08/29/16 17:35 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	08/29/16 17:35 / kjw
Methylene chloride	ND	ug/L	D	1.0		SW8260B	08/29/16 17:35 / kjw
Styrene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Tetrachloroethene	2.7	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Toluene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,1,1-Trichloroethane	0.11	ug/L	J	0.50		SW8260B	08/29/16 17:35 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Trichloroethene	0.65	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080480-002
Client Sample ID: CHHL-1608-101

Report Date: 08/31/16
Collection Date: 08/18/16 09:45
DateReceived: 08/18/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	08/29/16 17:35 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	08/29/16 17:35 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	08/29/16 17:35 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	08/29/16 17:35 / kjw
Surr: 1,2-Dichloroethane-d4	109	%REC		70-130		SW8260B	08/29/16 17:35 / kjw
Surr: Dibromofluoromethane	111	%REC		77-126		SW8260B	08/29/16 17:35 / kjw
Surr: p-Bromofluorobenzene	131	%REC	S	76-127		SW8260B	08/29/16 17:35 / kjw
Surr: Toluene-d8	92.0	%REC		79-122		SW8260B	08/29/16 17:35 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080480-003
Client Sample ID: TB 5756

Report Date: 08/31/16
Collection Date: 08/18/16 09:25
DateReceived: 08/18/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	08/29/16 16:29 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	08/29/16 16:29 / kjw
Benzene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	08/29/16 16:29 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	08/29/16 16:29 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	08/29/16 16:29 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/29/16 16:29 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	08/29/16 16:29 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	08/29/16 16:29 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	08/29/16 16:29 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	08/29/16 16:29 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	08/29/16 16:29 / kjw
Methylene chloride	ND	ug/L	D	1.0		SW8260B	08/29/16 16:29 / kjw
Styrene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Toluene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16080480-003
Client Sample ID: TB 5756

Report Date: 08/31/16
Collection Date: 08/18/16 09:25
DateReceived: 08/18/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	08/29/16 16:29 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	08/29/16 16:29 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	08/29/16 16:29 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	08/29/16 16:29 / kjw
Surr: 1,2-Dichloroethane-d4	109	%REC		70-130		SW8260B	08/29/16 16:29 / kjw
Surr: Dibromofluoromethane	111	%REC		77-126		SW8260B	08/29/16 16:29 / kjw
Surr: p-Bromofluorobenzene	125	%REC		76-127		SW8260B	08/29/16 16:29 / kjw
Surr: Toluene-d8	99.0	%REC		79-122		SW8260B	08/29/16 16:29 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/31/16
Work Order: H16080480

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R118159	
Lab ID: 082916_CCV_4	54	Continuing Calibration Verification Standard							08/29/16 11:06	
trans-1,4-Dichloro-2-butene		4.60	ug/L	0.50	92	70	130			
Acetone		36.0	ug/L	10	72	70	130			
Acrylonitrile		47.2	ug/L	20	94	70	130			
Benzene		5.84	ug/L	0.50	117	70	130			
Bromochloromethane		4.80	ug/L	0.50	96	70	130			
Bromodichloromethane		5.00	ug/L	0.50	100	70	130			
Bromoform		5.28	ug/L	0.50	106	70	130			
Bromomethane		6.00	ug/L	0.50	120	70	130			
Carbon disulfide		4.80	ug/L	0.50	96	70	130			
Carbon tetrachloride		5.28	ug/L	0.50	106	70	130			
Chlorobenzene		5.84	ug/L	0.50	117	70	130			
Chlorodibromomethane		4.84	ug/L	0.50	97	70	130			
Chloroethane		4.52	ug/L	0.50	90	70	130			
Chloroform		5.48	ug/L	0.50	110	80	120			
Chloromethane		4.52	ug/L	0.50	90	70	130			
1,2-Dibromo-3-chloropropane		5.60	ug/L	0.50	112	70	130			
1,2-Dibromoethane		5.08	ug/L	0.50	102	70	130			
Dibromomethane		5.20	ug/L	0.50	104	70	130			
1,2-Dichlorobenzene		5.44	ug/L	0.50	109	70	130			
1,4-Dichlorobenzene		5.08	ug/L	0.50	102	70	130			
Dichlorodifluoromethane		4.96	ug/L	0.50	99	70	130			
1,1-Dichloroethane		5.00	ug/L	0.50	100	70	130			
1,2-Dichloroethane		5.00	ug/L	0.50	100	70	130			
1,1-Dichloroethene		5.88	ug/L	0.50	118	80	120			
cis-1,2-Dichloroethene		5.36	ug/L	0.50	107	70	130			
trans-1,2-Dichloroethene		5.52	ug/L	0.50	110	70	130			
1,2-Dichloropropane		5.12	ug/L	0.50	102	80	120			
cis-1,3-Dichloropropene		5.08	ug/L	0.50	102	70	130			
trans-1,3-Dichloropropene		4.68	ug/L	0.50	94	70	130			
Ethylbenzene		5.52	ug/L	0.50	110	80	120			
2-Hexanone		38.6	ug/L	10	77	70	130			
Iodomethane		5.28	ug/L	0.50	106	70	130			
Methyl ethyl ketone		45.2	ug/L	10	90	70	130			
Methyl isobutyl ketone		48.0	ug/L	10	96	70	130			
Methylene chloride		4.68	ug/L	0.50	94	70	130			
Styrene		4.72	ug/L	0.50	94	70	130			
1,1,1,2-Tetrachloroethane		5.60	ug/L	0.50	112	70	130			
1,1,2,2-Tetrachloroethane		5.44	ug/L	0.50	109	70	130			
Tetrachloroethene		5.20	ug/L	0.50	104	70	130			
Toluene		5.32	ug/L	0.50	106	80	120			
1,1,1-Trichloroethane		5.44	ug/L	0.50	109	70	130			
1,1,2-Trichloroethane		4.80	ug/L	0.50	96	70	130			
Trichloroethene		5.16	ug/L	0.50	103	70	130			
Trichlorofluoromethane		5.20	ug/L	0.50	104	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/31/16
Work Order: H16080480

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R118159	
Lab ID: 082916_CCV_4	54	Continuing Calibration Verification Standard							08/29/16 11:06	
1,2,3-Trichloropropane		6.16	ug/L	0.50	123	70	130			
Vinyl acetate		5.04	ug/L	0.50	101	70	130			
Vinyl chloride		4.40	ug/L	0.50	88	80	120			
m+p-Xylenes		10.2	ug/L	0.50	102	70	130			
o-Xylene		5.44	ug/L	0.50	109	70	130			
Xylenes, Total		15.7	ug/L	0.50	105	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	90	69	131			
Surr: Dibromofluoromethane				1.0	102	70	125			
Surr: p-Bromofluorobenzene				1.0	107	76	123			
Surr: Toluene-d8				1.0	107	80	119			
Method: SW8260B									Batch: R118159	
Lab ID: 082916_LCS_5	54	Laboratory Control Sample				Run: 1SATURN_160829A			08/29/16 11:48	
trans-1,4-Dichloro-2-butene		4.72	ug/L	0.50	94	67	132			
Acetone		29.8	ug/L	10	60	55	144			
Acrylonitrile		44.8	ug/L	20	90	63	134			
Benzene		5.16	ug/L	0.50	103	69	129			
Bromochloromethane		4.36	ug/L	0.50	87	72	125			
Bromodichloromethane		4.20	ug/L	0.50	84	71	122			
Bromoform		4.32	ug/L	0.50	86	65	130			
Bromomethane		7.32	ug/L	0.50	146	60	136			S
Carbon disulfide		5.20	ug/L	0.50	104	71	135			
Carbon tetrachloride		4.56	ug/L	0.50	91	77	121			
Chlorobenzene		5.20	ug/L	0.50	104	78	120			
Chlorodibromomethane		4.24	ug/L	0.50	85	70	122			
Chloroethane		4.04	ug/L	0.50	81	62	135			
Chloroform		4.88	ug/L	0.50	98	71	121			
Chloromethane		5.40	ug/L	0.50	108	66	139			
1,2-Dibromo-3-chloropropane		4.44	ug/L	0.50	89	59	130			
1,2-Dibromoethane		4.32	ug/L	0.50	86	60	137			
Dibromomethane		4.32	ug/L	0.50	86	69	122			
1,2-Dichlorobenzene		4.92	ug/L	0.50	98	74	122			
1,4-Dichlorobenzene		4.84	ug/L	0.50	97	75	122			
Dichlorodifluoromethane		5.92	ug/L	0.50	118	57	144			
1,1-Dichloroethane		4.36	ug/L	0.50	87	76	125			
1,2-Dichloroethane		4.48	ug/L	0.50	90	69	131			
1,1-Dichloroethene		4.92	ug/L	0.50	98	67	129			
cis-1,2-Dichloroethene		4.60	ug/L	0.50	92	75	122			
trans-1,2-Dichloroethene		4.72	ug/L	0.50	94	75	124			
1,2-Dichloropropane		4.64	ug/L	0.50	93	75	127			
cis-1,3-Dichloropropene		4.32	ug/L	0.50	86	73	124			
trans-1,3-Dichloropropene		3.64	ug/L	0.50	73	72	127			
Ethylbenzene		4.80	ug/L	0.50	96	74	125			
2-Hexanone		35.4	ug/L	10	71	70	128			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/31/16
Project: 1273 City of Helena
Work Order: H16080480

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R118159
Lab ID: 082916_LCS_5	54	Laboratory Control Sample				Run: 1SATURN_160829A				08/29/16 11:48
Iodomethane		5.28	ug/L	0.50	106	52	130			
Methyl ethyl ketone		39.6	ug/L	10	79	56	141			
Methyl isobutyl ketone		41.2	ug/L	10	82	71	121			
Methylene chloride		4.08	ug/L	0.50	82	61	125			
Styrene		4.00	ug/L	0.50	80	75	120			
1,1,1,2-Tetrachloroethane		4.52	ug/L	0.50	90	76	122			
1,1,2,2-Tetrachloroethane		4.64	ug/L	0.50	93	67	124			
Tetrachloroethene		4.76	ug/L	0.50	95	75	126			
Toluene		4.48	ug/L	0.50	90	73	122			
1,1,1-Trichloroethane		5.04	ug/L	0.50	101	76	124			
1,1,2-Trichloroethane		4.08	ug/L	0.50	82	72	125			
Trichloroethene		4.56	ug/L	0.50	91	72	126			
Trichlorofluoromethane		5.76	ug/L	0.50	115	73	131			
1,2,3-Trichloropropane		4.80	ug/L	0.50	96	58	142			
Vinyl acetate		6.40	ug/L	0.50	128	47	154			
Vinyl chloride		5.16	ug/L	0.50	103	69	129			
m+p-Xylenes		9.20	ug/L	0.50	92	72	124			
o-Xylene		4.76	ug/L	0.50	95	74	123			
Xylenes, Total		14.0	ug/L	0.50	93	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	85	69	131			
Surr: Dibromofluoromethane				1.0	98	70	125			
Surr: p-Bromofluorobenzene				1.0	110	76	123			
Surr: Toluene-d8				1.0	102	80	119			
Lab ID: 082916_MBLK_9	54	Method Blank				Run: 1SATURN_160829A				08/29/16 14:08
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Acetone		ND	ug/L	10						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/31/16
Work Order: H16080480

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R118159
Lab ID: 082916_MBLK_9	54	Method Blank				Run: 1SATURN_160829A				08/29/16 14:08
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	101	69	131			
Surr: Dibromofluoromethane				1.0	105	70	125			
Surr: p-Bromofluorobenzene				1.0	129	76	123			S
Surr: Toluene-d8				1.0	97	80	119			
Lab ID: H16080480-002AMS	54	Sample Matrix Spike				Run: 1SATURN_160829A				08/29/16 18:09
trans-1,4-Dichloro-2-butene		5.36	ug/L	0.50	107	67	132			
Acetone		33.8	ug/L	10	68	55	144			
Acrylonitrile		55.6	ug/L	20	111	63	134			
Benzene		5.44	ug/L	0.50	109	69	129			
Bromochloromethane		4.48	ug/L	0.50	90	72	125			
Bromodichloromethane		4.40	ug/L	0.50	88	71	122			
Bromoform		5.24	ug/L	0.50	105	65	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/31/16
Project: 1273 City of Helena
Work Order: H16080480

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R118159	
Lab ID: H16080480-002AMS	54	Sample Matrix Spike				Run: 1SATURN_160829A			08/29/16 18:09	
Bromomethane		6.76	ug/L	0.50	135	60	136			
Carbon disulfide		5.32	ug/L	0.50	106	71	135			
Carbon tetrachloride		4.88	ug/L	0.50	98	77	121			
Chlorobenzene		5.28	ug/L	0.50	106	78	120			
Chlorodibromomethane		4.60	ug/L	0.50	92	70	122			
Chloroethane		3.56	ug/L	0.50	71	62	135			
Chloroform		5.16	ug/L	0.50	90	71	121			
Chloromethane		5.16	ug/L	0.50	103	66	139			
1,2-Dibromo-3-chloropropane		4.88	ug/L	0.50	98	59	130			
1,2-Dibromoethane		4.64	ug/L	0.50	93	60	137			
Dibromomethane		4.88	ug/L	0.50	98	69	122			
1,2-Dichlorobenzene		4.76	ug/L	0.50	95	74	122			
1,4-Dichlorobenzene		4.48	ug/L	0.50	90	75	122			
Dichlorodifluoromethane		6.04	ug/L	0.50	108	57	144			
1,1-Dichloroethane		5.16	ug/L	0.50	73	76	125			S
1,2-Dichloroethane		4.80	ug/L	0.50	96	69	131			
1,1-Dichloroethene		4.68	ug/L	0.50	94	67	129			
cis-1,2-Dichloroethene		5.12	ug/L	0.50	89	75	122			
trans-1,2-Dichloroethene		4.84	ug/L	0.50	97	75	124			
1,2-Dichloropropane		4.84	ug/L	0.50	97	75	127			
cis-1,3-Dichloropropene		4.68	ug/L	0.50	94	73	124			
trans-1,3-Dichloropropene		4.12	ug/L	0.50	82	72	127			
Ethylbenzene		4.84	ug/L	0.50	97	74	125			
2-Hexanone		45.6	ug/L	10	91	70	128			
Iodomethane		5.16	ug/L	0.50	103	52	130			
Methyl ethyl ketone		45.2	ug/L	10	90	56	141			
Methyl isobutyl ketone		51.6	ug/L	10	103	71	121			
Methylene chloride		4.16	ug/L	0.50	72	61	125			
Styrene		4.16	ug/L	0.50	83	75	120			
1,1,1,2-Tetrachloroethane		5.16	ug/L	0.50	103	76	122			
1,1,2,2-Tetrachloroethane		4.88	ug/L	0.50	98	67	124			
Tetrachloroethene		5.56	ug/L	0.50	58	75	126			S
Toluene		4.60	ug/L	0.50	92	73	122			
1,1,1-Trichloroethane		5.16	ug/L	0.50	101	76	124			
1,1,2-Trichloroethane		4.84	ug/L	0.50	97	72	125			
Trichloroethene		4.88	ug/L	0.50	85	72	126			
Trichlorofluoromethane		5.60	ug/L	0.50	112	73	131			
1,2,3-Trichloropropane		5.32	ug/L	0.50	106	58	142			
Vinyl acetate		7.56	ug/L	0.50	151	47	154			
Vinyl chloride		5.04	ug/L	0.50	101	69	129			
m+p-Xylenes		9.00	ug/L	0.50	90	72	124			
o-Xylene		5.08	ug/L	0.50	102	74	123			
Xylenes, Total		14.1	ug/L	0.50	94	72	124			
Surr: 1,2-Dichloroethane-d4				1.0	103	69	131			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/31/16
Work Order: H16080480

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R118159	
Lab ID: H16080480-002AMS	54	Sample Matrix Spike				Run: 1SATURN_160829A			08/29/16 18:09	
Surr: Dibromofluoromethane				1.0	106	70	125			
Surr: p-Bromofluorobenzene				1.0	107	76	123			
Surr: Toluene-d8				1.0	102	80	119			
Lab ID: H16080480-002AMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_160829A			08/29/16 18:42	
trans-1,4-Dichloro-2-butene		5.00	ug/L	0.50	100	67	132	6.9	20	
Acetone		36.3	ug/L	10	73	55	144	7.1	20	
Acrylonitrile		56.0	ug/L	20	112	63	134	0.7	20	
Benzene		5.52	ug/L	0.50	110	69	129	1.5	20	
Bromochloromethane		4.52	ug/L	0.50	90	72	125	0.9	20	
Bromodichloromethane		4.48	ug/L	0.50	90	71	122	1.8	20	
Bromoform		5.24	ug/L	0.50	105	65	130	0.0	20	
Bromomethane		7.04	ug/L	0.50	141	60	136	4.1	20	S
Carbon disulfide		5.12	ug/L	0.50	102	71	135	3.8	20	
Carbon tetrachloride		4.88	ug/L	0.50	98	77	121	0.0	20	
Chlorobenzene		5.56	ug/L	0.50	111	78	120	5.2	20	
Chlorodibromomethane		4.88	ug/L	0.50	98	70	122	5.9	20	
Chloroethane		3.72	ug/L	0.50	74	62	135	4.4	20	
Chloroform		5.24	ug/L	0.50	91	71	121	1.5	20	
Chloromethane		5.20	ug/L	0.50	104	66	139	0.8	20	
1,2-Dibromo-3-chloropropane		5.04	ug/L	0.50	101	59	130	3.2	20	
1,2-Dibromoethane		4.88	ug/L	0.50	98	60	137	5.0	20	
Dibromomethane		5.00	ug/L	0.50	100	69	122	2.4	20	
1,2-Dichlorobenzene		5.12	ug/L	0.50	102	74	122	7.3	20	
1,4-Dichlorobenzene		4.48	ug/L	0.50	90	75	122	0.0	20	
Dichlorodifluoromethane		6.00	ug/L	0.50	107	57	144	0.7	20	
1,1-Dichloroethane		5.12	ug/L	0.50	73	76	125	0.8	20	S
1,2-Dichloroethane		4.96	ug/L	0.50	99	69	131	3.3	20	
1,1-Dichloroethene		4.88	ug/L	0.50	98	67	129	4.2	20	
cis-1,2-Dichloroethene		5.16	ug/L	0.50	89	75	122	0.8	20	
trans-1,2-Dichloroethene		5.04	ug/L	0.50	101	75	124	4.0	20	
1,2-Dichloropropane		5.04	ug/L	0.50	101	75	127	4.0	20	
cis-1,3-Dichloropropene		4.76	ug/L	0.50	95	73	124	1.7	20	
trans-1,3-Dichloropropene		4.48	ug/L	0.50	90	72	127	8.4	20	
Ethylbenzene		4.96	ug/L	0.50	99	74	125	2.4	20	
2-Hexanone		49.6	ug/L	10	99	70	128	8.4	20	
Iodomethane		5.12	ug/L	0.50	102	52	130	0.8	20	
Methyl ethyl ketone		49.6	ug/L	10	99	56	141	9.3	20	
Methyl isobutyl ketone		54.8	ug/L	10	110	71	121	6.0	20	
Methylene chloride		4.24	ug/L	0.50	73	61	125	1.9	20	
Styrene		4.48	ug/L	0.50	90	75	120	7.4	20	
1,1,1,2-Tetrachloroethane		5.20	ug/L	0.50	104	76	122	0.8	20	
1,1,2,2-Tetrachloroethane		5.04	ug/L	0.50	101	67	124	3.2	20	
Tetrachloroethene		5.52	ug/L	0.50	57	75	126	0.7	20	S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Report Date: 08/31/16
Project: 1273 City of Helena
Work Order: H16080480

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R118159	
Lab ID: H16080480-002AMSD	54	Sample Matrix Spike Duplicate				Run: 1SATURN_160829A			08/29/16 18:42	
Toluene		4.60	ug/L	0.50	92	73	122	0.0	20	
1,1,1-Trichloroethane		5.16	ug/L	0.50	101	76	124	0.0	20	
1,1,2-Trichloroethane		4.84	ug/L	0.50	97	72	125	0.0	20	
Trichloroethene		4.96	ug/L	0.50	86	72	126	1.6	20	
Trichlorofluoromethane		5.48	ug/L	0.50	110	73	131	2.2	20	
1,2,3-Trichloropropane		4.88	ug/L	0.50	98	58	142	8.6	20	
Vinyl acetate		8.32	ug/L	0.50	166	47	154	9.6	20	S
Vinyl chloride		5.04	ug/L	0.50	101	69	129	0.0	20	
m+p-Xylenes		9.48	ug/L	0.50	95	72	124	5.2	20	
o-Xylene		5.00	ug/L	0.50	100	74	123	1.6	20	
Xylenes, Total		14.5	ug/L	0.50	97	72	124	2.8	20	
Surr: 1,2-Dichloroethane-d4				1.0	105	69	131			
Surr: Dibromofluoromethane				1.0	105	70	125			
Surr: p-Bromofluorobenzene				1.0	107	76	123			
Surr: Toluene-d8				1.0	106	80	119			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

Work Order Receipt Checklist

Hydrometrics Inc

H16080480

Login completed by: Tracy L. Lorash
Reviewed by: BL2000\rwilliams
Reviewed Date: 8/24/2016

Date Received: 8/18/2016
Received by: TLL
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	2.5°C On Ice		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Applicable ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

Hydrometrics, Inc.

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
1273	CITY OF HELENA

SAMPLERS: *(Signature)*

DATE	TIME	COMP	GRAB	SAMPLE NUMBER	NO. OF CON-TAINERS	Commons UF / RAW	Nutrients UF / H_2SO_4	Diss. Metal F / HNO_3	CN UF / NaOH	Total Metals UF / HNO_3	Total Recoverable Metals UF / HNO_3	BTEX	TPH	8260 LOW LIST UF / HCl - 0.0005 mg/L DETECTION LIMIT	REMARKS
8/18/16	09:25		X	CHHL - 1608 - 100	3									X	H1608048O
8/18/16	09:45		X	CHHL - 1608 - 101	3									X	
				1 TRIP BLANK											

Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Lab	P.O. #	Shipped via: Bus FedEx UPS
	8/18/16 16:09		ENERGY LABS - HELENA	HLN 11727	Other HAND DELIVERED
Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Remarks		Air Bill #
			2.5° TB on ice hand del.		
Relinquished *(Signature)*	Date / Time	Received for Laboratory by *(Signature)*	Date / Time	Enclosed: ☐ Parameter sheet w/detection limits	
		Tracy Carroll	8/18/16 16:09	☐ QA / AC standard mixing instructions ☐ Cover letter	
				☒ Other SAME AS HISTORICALLY	

Split Samples:
☐ Accepted ☐ Declined _____
Signature

HFORM-1 07/11
Action Print 406-442-7595

Return results & electronic copy to:
QA / QC Dept. at address at top of page

SITE	SAMPLE #	DATE	TIME	BOTTLES
BILL	CHHL -	9/30/16	10:30	3/HF/HCL/VOC/40
ROBERTS	1609 -			1 TRIP BLANK
SPRINKLER	100			

SITE	TIME	HOURS	FLOW	TOTALIZER
HL-99-1	10:06	3932.2	11.50	T1: 585241
				T2: 268375
HL-99-2	10:11	3932.5	15.38	T1: 999295
				T2: 380014
HL-99-3	10:16	3641.1	27.38	T1: 295465
				T2: 425637

- WATCH FOR BLACK WIDOWS

ANALYTICAL SUMMARY REPORT

October 12, 2016

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Work Order: H16100003

Project Name: 1273 City of Helena

Energy Laboratories Inc Helena MT received the following 2 samples for Hydrometrics Inc on 9/30/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16100003-001	CHHL-1609-100	09/30/16 10:30	09/30/16	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H16100003-002	TB 5877	09/30/16 10:30	09/30/16	Trip Blank	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Amanda Carlson
Assistant Laboratory Manager-Helena,MT

Digitally signed by
Amanda B. Carlson
Date: 2016.10.12 11:38:42 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16100003-001
Client Sample ID: CHHL-1609-100

Report Date: 10/12/16
Collection Date: 09/30/16 10:30
DateReceived: 09/30/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/11/16 10:38 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	10/11/16 10:38 / kjw
Benzene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/11/16 10:38 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/11/16 10:38 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/11/16 10:38 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/11/16 10:38 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/11/16 10:38 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	10/11/16 10:38 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	10/11/16 10:38 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/11/16 10:38 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/11/16 10:38 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Styrene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Toluene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16100003-001
Client Sample ID: CHHL-1609-100

Report Date: 10/12/16
Collection Date: 09/30/16 10:30
DateReceived: 09/30/16
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/11/16 10:38 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	10/11/16 10:38 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/11/16 10:38 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/11/16 10:38 / kjw
Surr: 1,2-Dichloroethane-d4	104	%REC		70-130		SW8260B	10/11/16 10:38 / kjw
Surr: Dibromofluoromethane	96.0	%REC		77-126		SW8260B	10/11/16 10:38 / kjw
Surr: p-Bromofluorobenzene	116	%REC		76-127		SW8260B	10/11/16 10:38 / kjw
Surr: Toluene-d8	96.0	%REC		79-122		SW8260B	10/11/16 10:38 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16100003-002
Client Sample ID: TB 5877

Report Date: 10/12/16
Collection Date: 09/30/16 10:30
DateReceived: 09/30/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/11/16 09:49 / kjw
Acrylonitrile	ND	ug/L		3.0		SW8260B	10/11/16 09:49 / kjw
Benzene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Bromoform	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Bromomethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/11/16 09:49 / kjw
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Chloroethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Chloroform	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Chloromethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/11/16 09:49 / kjw
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Dibromomethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/11/16 09:49 / kjw
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
cis-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/11/16 09:49 / kjw
trans-1,3-Dichloropropene	ND	ug/L		0.30		SW8260B	10/11/16 09:49 / kjw
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
2-Hexanone	ND	ug/L		20		SW8260B	10/11/16 09:49 / kjw
Iodomethane	ND	ug/L		1.0		SW8260B	10/11/16 09:49 / kjw
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/11/16 09:49 / kjw
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/11/16 09:49 / kjw
Methylene chloride	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Styrene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Tetrachloroethene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Toluene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Trichloroethene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H16100003-002
Client Sample ID: TB 5877

Report Date: 10/12/16
Collection Date: 09/30/16 10:30
DateReceived: 09/30/16
Matrix: Trip Blank

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/11/16 09:49 / kjw
Vinyl chloride	ND	ug/L		0.40		SW8260B	10/11/16 09:49 / kjw
m+p-Xylenes	ND	ug/L		1.0		SW8260B	10/11/16 09:49 / kjw
o-Xylene	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/11/16 09:49 / kjw
Surr: 1,2-Dichloroethane-d4	93.0	%REC		70-130		SW8260B	10/11/16 09:49 / kjw
Surr: Dibromofluoromethane	83.0	%REC		77-126		SW8260B	10/11/16 09:49 / kjw
Surr: p-Bromofluorobenzene	114	%REC		76-127		SW8260B	10/11/16 09:49 / kjw
Surr: Toluene-d8	98.0	%REC		79-122		SW8260B	10/11/16 09:49 / kjw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/12/16
Work Order: H16100003

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R119364
Lab ID: 101116_CCV_3	Continuing Calibration Verification Standard								10/11/16 07:29
trans-1,4-Dichloro-2-butene	3.89	ug/L	0.50	78	70	130			
Acetone	39.6	ug/L	10	79	70	130			
Acrylonitrile	42.4	ug/L	20	85	70	130			
Benzene	5.28	ug/L	0.50	106	70	130			
Bromochloromethane	4.48	ug/L	0.50	90	70	130			
Bromodichloromethane	5.24	ug/L	0.50	105	70	130			
Bromoform	3.84	ug/L	0.50	77	70	130			
Bromomethane	3.62	ug/L	0.50	72	70	130			
Carbon disulfide	5.04	ug/L	0.50	101	70	130			
Carbon tetrachloride	5.24	ug/L	0.50	105	70	130			
Chlorobenzene	5.44	ug/L	0.50	109	70	130			
Chlorodibromomethane	5.08	ug/L	0.50	102	70	130			
Chloroethane	4.84	ug/L	0.50	97	70	130			
Chloroform	4.72	ug/L	0.50	94	80	120			
Chloromethane	3.92	ug/L	0.50	78	70	130			
1,2-Dibromo-3-chloropropane	4.76	ug/L	0.50	95	70	130			
1,2-Dibromoethane	4.96	ug/L	0.50	99	70	130			
Dibromomethane	4.96	ug/L	0.50	99	70	130			
1,2-Dichlorobenzene	5.04	ug/L	0.50	101	70	130			
1,4-Dichlorobenzene	5.20	ug/L	0.50	104	70	130			
Dichlorodifluoromethane	5.28	ug/L	0.50	106	70	130			
1,1-Dichloroethane	5.16	ug/L	0.50	103	70	130			
1,2-Dichloroethane	4.36	ug/L	0.50	87	70	130			
1,1-Dichloroethene	4.96	ug/L	0.50	99	80	120			
cis-1,2-Dichloroethene	5.12	ug/L	0.50	102	70	130			
trans-1,2-Dichloroethene	4.96	ug/L	0.50	99	70	130			
1,2-Dichloropropane	5.60	ug/L	0.50	112	80	120			
cis-1,3-Dichloropropene	5.12	ug/L	0.50	102	70	130			
trans-1,3-Dichloropropene	4.76	ug/L	0.50	95	70	130			
Ethylbenzene	5.56	ug/L	0.50	111	80	120			
2-Hexanone	38.4	ug/L	10	77	70	130			
Iodomethane	4.48	ug/L	0.50	90	70	130			
Methyl ethyl ketone	40.4	ug/L	10	81	70	130			
Methyl isobutyl ketone	44.4	ug/L	10	89	70	130			
Methylene chloride	4.24	ug/L	0.50	85	70	130			
Styrene	5.28	ug/L	0.50	106	70	130			
1,1,1,2-Tetrachloroethane	5.20	ug/L	0.50	104	70	130			
1,1,2,2-Tetrachloroethane	4.40	ug/L	0.50	88	70	130			
Tetrachloroethene	5.88	ug/L	0.50	118	70	130			
Toluene	5.44	ug/L	0.50	109	80	120			
1,1,1-Trichloroethane	5.00	ug/L	0.50	100	70	130			
1,1,2-Trichloroethane	5.28	ug/L	0.50	106	70	130			
Trichloroethene	5.64	ug/L	0.50	113	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/12/16
Work Order: H16100003

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Analytical Run: R119364
Lab ID: 101116_CCV_3	Continuing Calibration Verification Standard								10/11/16 07:29
Trichlorofluoromethane	5.44	ug/L	0.50	109	70	130			
1,2,3-Trichloropropane	4.20	ug/L	0.50	84	70	130			
Vinyl acetate	4.20	ug/L	0.50	84	70	130			
Vinyl chloride	4.76	ug/L	0.50	95	80	120			
m+p-Xylenes	11.0	ug/L	0.50	110	70	130			
o-Xylene	5.80	ug/L	0.50	116	70	130			
Xylenes, Total	16.8	ug/L	0.50	112	70	130			
Surr: 1,2-Dichloroethane-d4			1.0	101	69	131			
Surr: Dibromofluoromethane			1.0	97	70	125			
Surr: p-Bromofluorobenzene			1.0	97	76	123			
Surr: Toluene-d8			1.0	108	80	119			
Method: SW8260B									Batch: R119364
Lab ID: 101116_LCS_4	Laboratory Control Sample				Run: 1SATURN_161011A				10/11/16 08:05
trans-1,4-Dichloro-2-butene	3.54	ug/L	0.50	71	67	132			
Acetone	36.0	ug/L	10	72	55	144			
Acrylonitrile	38.4	ug/L	20	77	63	134			
Benzene	4.72	ug/L	0.50	94	69	129			
Bromochloromethane	4.00	ug/L	0.50	80	72	125			
Bromodichloromethane	4.52	ug/L	0.50	90	71	122			
Bromoform	3.49	ug/L	0.50	70	65	130			
Bromomethane	4.48	ug/L	0.50	90	60	136			
Carbon disulfide	4.12	ug/L	0.50	82	71	135			
Carbon tetrachloride	4.92	ug/L	0.50	98	77	121			
Chlorobenzene	5.20	ug/L	0.50	104	78	120			
Chlorodibromomethane	4.28	ug/L	0.50	86	70	122			
Chloroethane	4.00	ug/L	0.50	80	62	135			
Chloroform	4.28	ug/L	0.50	86	71	121			
Chloromethane	4.60	ug/L	0.50	92	66	139			
1,2-Dibromo-3-chloropropane	4.00	ug/L	0.50	80	59	130			
1,2-Dibromoethane	4.04	ug/L	0.50	81	60	137			
Dibromomethane	4.36	ug/L	0.50	87	69	122			
1,2-Dichlorobenzene	4.84	ug/L	0.50	97	74	122			
1,4-Dichlorobenzene	5.04	ug/L	0.50	101	75	122			
Dichlorodifluoromethane	4.88	ug/L	0.50	98	57	144			
1,1-Dichloroethane	4.52	ug/L	0.50	90	76	125			
1,2-Dichloroethane	3.90	ug/L	0.50	78	69	131			
1,1-Dichloroethene	5.08	ug/L	0.50	102	67	129			
cis-1,2-Dichloroethene	4.76	ug/L	0.50	95	75	122			
trans-1,2-Dichloroethene	4.56	ug/L	0.50	91	75	124			
1,2-Dichloropropane	5.56	ug/L	0.50	111	75	127			
cis-1,3-Dichloropropene	4.76	ug/L	0.50	95	73	124			
trans-1,3-Dichloropropene	3.96	ug/L	0.50	79	72	127			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/12/16
Work Order: H16100003

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R119364
Lab ID: 101116_LCS_4	Laboratory Control Sample				Run: 1SATURN_161011A				10/11/16 08:05
Ethylbenzene	5.12	ug/L	0.50	102	74	125			
2-Hexanone	36.9	ug/L	10	74	70	128			
Iodomethane	3.82	ug/L	0.50	76	52	130			
Methyl ethyl ketone	37.7	ug/L	10	75	56	141			
Methyl isobutyl ketone	40.8	ug/L	10	82	71	121			
Methylene chloride	3.90	ug/L	0.50	78	61	125			
Styrene	4.84	ug/L	0.50	97	75	120			
1,1,1,2-Tetrachloroethane	4.80	ug/L	0.50	96	76	122			
1,1,2,2-Tetrachloroethane	4.12	ug/L	0.50	82	67	124			
Tetrachloroethene	5.40	ug/L	0.50	108	75	126			
Toluene	5.16	ug/L	0.50	103	73	122			
1,1,1-Trichloroethane	4.88	ug/L	0.50	98	76	124			
1,1,2-Trichloroethane	4.60	ug/L	0.50	92	72	125			
Trichloroethene	5.28	ug/L	0.50	106	72	126			
Trichlorofluoromethane	5.60	ug/L	0.50	112	73	131			
1,2,3-Trichloropropane	3.76	ug/L	0.50	75	58	142			
Vinyl acetate	4.24	ug/L	0.50	85	47	154			
Vinyl chloride	5.20	ug/L	0.50	104	69	129			
m+p-Xylenes	10.1	ug/L	0.50	101	72	124			
o-Xylene	5.44	ug/L	0.50	109	74	123			
Xylenes, Total	15.6	ug/L	0.50	104	72	124			
Surr: 1,2-Dichloroethane-d4			1.0	92	69	131			
Surr: Dibromofluoromethane			1.0	96	70	125			
Surr: p-Bromofluorobenzene			1.0	98	76	123			
Surr: Toluene-d8			1.0	106	80	119			
Lab ID: 101116_MBLK_6	Method Blank				Run: 1SATURN_161011A				10/11/16 09:15
trans-1,4-Dichloro-2-butene	ND	ug/L	0.50						
Acetone	ND	ug/L	10						
Acrylonitrile	ND	ug/L	20						
Benzene	ND	ug/L	0.50						
Bromochloromethane	ND	ug/L	0.50						
Bromodichloromethane	ND	ug/L	0.50						
Bromoform	ND	ug/L	0.50						
Bromomethane	ND	ug/L	0.50						
Carbon disulfide	ND	ug/L	0.50						
Carbon tetrachloride	ND	ug/L	0.50						
Chlorobenzene	ND	ug/L	0.50						
Chlorodibromomethane	ND	ug/L	0.50						
Chloroethane	ND	ug/L	0.50						
Chloroform	ND	ug/L	0.50						
Chloromethane	ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane	ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/12/16
Work Order: H16100003

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R119364
Lab ID: 101116_MBLK_6	Method Blank				Run: 1SATURN_161011A				10/11/16 09:15
1,2-Dibromoethane	ND	ug/L	0.50						
Dibromomethane	ND	ug/L	0.50						
1,2-Dichlorobenzene	ND	ug/L	0.50						
1,4-Dichlorobenzene	ND	ug/L	0.50						
Dichlorodifluoromethane	ND	ug/L	0.50						
1,1-Dichloroethane	ND	ug/L	0.50						
1,2-Dichloroethane	ND	ug/L	0.50						
1,1-Dichloroethene	ND	ug/L	0.50						
cis-1,2-Dichloroethene	ND	ug/L	0.50						
trans-1,2-Dichloroethene	ND	ug/L	0.50						
1,2-Dichloropropane	ND	ug/L	0.50						
cis-1,3-Dichloropropene	ND	ug/L	0.50						
trans-1,3-Dichloropropene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
2-Hexanone	ND	ug/L	10						
Iodomethane	ND	ug/L	0.50						
Methyl ethyl ketone	ND	ug/L	10						
Methyl isobutyl ketone	ND	ug/L	10						
Methylene chloride	ND	ug/L	0.50						
Styrene	ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50						
Tetrachloroethene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
1,1,1-Trichloroethane	ND	ug/L	0.50						
1,1,2-Trichloroethane	ND	ug/L	0.50						
Trichloroethene	ND	ug/L	0.50						
Trichlorofluoromethane	ND	ug/L	0.50						
1,2,3-Trichloropropane	ND	ug/L	0.50						
Vinyl acetate	ND	ug/L	0.50						
Vinyl chloride	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4			1.0	96	69	131			
Surr: Dibromofluoromethane			1.0	86	70	125			
Surr: p-Bromofluorobenzene			1.0	114	76	123			
Surr: Toluene-d8			1.0	98	80	119			
Lab ID: H16100003-001AMS	Sample Matrix Spike				Run: 1SATURN_161011A				10/11/16 15:01
trans-1,4-Dichloro-2-butene	7.92	ug/L	1.0	79	67	132			
Acetone	84.8	ug/L	20	85	55	144			
Acrylonitrile	94.4	ug/L	40	94	63	134			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/12/16
Work Order: H16100003

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R119364
Lab ID: H16100003-001AMS	Sample Matrix Spike				Run: 1SATURN_161011A				10/11/16 15:01
Benzene	10.5	ug/L	1.0	105	69	129			
Bromochloromethane	8.96	ug/L	1.0	90	72	125			
Bromodichloromethane	10.2	ug/L	1.0	102	71	122			
Bromoform	7.48	ug/L	1.0	75	65	130			
Bromomethane	7.37	ug/L	1.0	74	60	136			
Carbon disulfide	8.40	ug/L	1.0	84	71	135			
Carbon tetrachloride	10.1	ug/L	1.0	101	77	121			
Chlorobenzene	11.1	ug/L	1.0	111	78	120			
Chlorodibromomethane	9.28	ug/L	1.0	93	70	122			
Chloroethane	3.99	ug/L	1.0	40	62	135			S
Chloroform	9.20	ug/L	1.0	92	71	121			
Chloromethane	8.56	ug/L	1.0	86	66	139			
1,2-Dibromo-3-chloropropane	9.92	ug/L	1.0	99	59	130			
1,2-Dibromoethane	9.52	ug/L	1.0	95	60	137			
Dibromomethane	9.68	ug/L	1.0	97	69	122			
1,2-Dichlorobenzene	9.92	ug/L	1.0	99	74	122			
1,4-Dichlorobenzene	9.76	ug/L	1.0	98	75	122			
Dichlorodifluoromethane	9.44	ug/L	1.0	94	57	144			
1,1-Dichloroethane	9.36	ug/L	1.0	94	76	125			
1,2-Dichloroethane	9.20	ug/L	1.0	92	69	131			
1,1-Dichloroethene	9.52	ug/L	1.0	95	67	129			
cis-1,2-Dichloroethene	10.0	ug/L	1.0	100	75	122			
trans-1,2-Dichloroethene	9.52	ug/L	1.0	95	75	124			
1,2-Dichloropropane	10.9	ug/L	1.0	109	75	127			
cis-1,3-Dichloropropene	11.0	ug/L	1.0	110	73	124			
trans-1,3-Dichloropropene	8.88	ug/L	1.0	89	72	127			
Ethylbenzene	10.2	ug/L	1.0	102	74	125			
2-Hexanone	94.4	ug/L	20	94	70	128			
Iodomethane	7.38	ug/L	1.0	74	52	130			
Methyl ethyl ketone	91.2	ug/L	20	91	56	141			
Methyl isobutyl ketone	92.0	ug/L	20	92	71	121			
Methylene chloride	8.48	ug/L	1.0	85	61	125			
Styrene	10.3	ug/L	1.0	103	75	120			
1,1,1,2-Tetrachloroethane	10.1	ug/L	1.0	101	76	122			
1,1,2,2-Tetrachloroethane	9.12	ug/L	1.0	91	67	124			
Tetrachloroethene	10.1	ug/L	1.0	101	75	126			
Toluene	10.2	ug/L	1.0	102	73	122			
1,1,1-Trichloroethane	9.84	ug/L	1.0	98	76	124			
1,1,2-Trichloroethane	10.3	ug/L	1.0	103	72	125			
Trichloroethene	10.0	ug/L	1.0	100	72	126			
Trichlorofluoromethane	11.4	ug/L	1.0	114	73	131			
1,2,3-Trichloropropane	8.72	ug/L	1.0	87	58	142			
Vinyl acetate	10.6	ug/L	1.0	106	47	154			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/12/16
Work Order: H16100003

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Batch: R119364	
Lab ID: H16100003-001AMS	Sample Matrix Spike				Run: 1SATURN_161011A			10/11/16 15:01	
Vinyl chloride	10.6	ug/L	1.0	106	69	129			
m+p-Xylenes	21.2	ug/L	1.0	106	72	124			
o-Xylene	10.7	ug/L	1.0	107	74	123			
Xylenes, Total	31.9	ug/L	1.0	106	72	124			
Surr: 1,2-Dichloroethane-d4			2.0	111	69	131			
Surr: Dibromofluoromethane			2.0	101	70	125			
Surr: p-Bromofluorobenzene			2.0	100	76	123			
Surr: Toluene-d8			2.0	103	80	119			
Lab ID: H16100003-001AMSD	Sample Matrix Spike Duplicate				Run: 1SATURN_161011A			10/11/16 15:34	
trans-1,4-Dichloro-2-butene	7.62	ug/L	1.0	76	67	132	3.9	20	
Acetone	82.4	ug/L	20	82	55	144	2.9	20	
Acrylonitrile	92.8	ug/L	40	93	63	134	1.7	20	
Benzene	9.92	ug/L	1.0	99	69	129	5.5	20	
Bromochloromethane	8.48	ug/L	1.0	85	72	125	5.5	20	
Bromodichloromethane	9.60	ug/L	1.0	96	71	122	5.7	20	
Bromoform	7.62	ug/L	1.0	76	65	130	1.8	20	
Bromomethane	8.40	ug/L	1.0	84	60	136	13	20	
Carbon disulfide	8.32	ug/L	1.0	83	71	135	1.0	20	
Carbon tetrachloride	9.60	ug/L	1.0	96	77	121	4.9	20	
Chlorobenzene	10.5	ug/L	1.0	105	78	120	5.9	20	
Chlorodibromomethane	9.44	ug/L	1.0	94	70	122	1.7	20	
Chloroethane	3.64	ug/L	1.0	36	62	135	9.2	20	S
Chloroform	8.88	ug/L	1.0	89	71	121	3.5	20	
Chloromethane	7.99	ug/L	1.0	80	66	139	6.9	20	
1,2-Dibromo-3-chloropropane	9.12	ug/L	1.0	91	59	130	8.4	20	
1,2-Dibromoethane	8.80	ug/L	1.0	88	60	137	7.9	20	
Dibromomethane	9.52	ug/L	1.0	95	69	122	1.7	20	
1,2-Dichlorobenzene	9.68	ug/L	1.0	97	74	122	2.4	20	
1,4-Dichlorobenzene	9.76	ug/L	1.0	98	75	122	0.0	20	
Dichlorodifluoromethane	9.44	ug/L	1.0	94	57	144	0.0	20	
1,1-Dichloroethane	9.20	ug/L	1.0	92	76	125	1.7	20	
1,2-Dichloroethane	8.56	ug/L	1.0	86	69	131	7.2	20	
1,1-Dichloroethene	9.60	ug/L	1.0	96	67	129	0.8	20	
cis-1,2-Dichloroethene	9.68	ug/L	1.0	97	75	122	3.3	20	
trans-1,2-Dichloroethene	9.04	ug/L	1.0	90	75	124	5.2	20	
1,2-Dichloropropane	10.9	ug/L	1.0	109	75	127	0.0	20	
cis-1,3-Dichloropropene	9.76	ug/L	1.0	98	73	124	12	20	
trans-1,3-Dichloropropene	8.72	ug/L	1.0	87	72	127	1.8	20	
Ethylbenzene	9.92	ug/L	1.0	99	74	125	2.4	20	
2-Hexanone	93.6	ug/L	20	94	70	128	0.9	20	
Iodomethane	7.44	ug/L	1.0	74	52	130	0.9	20	
Methyl ethyl ketone	86.4	ug/L	20	86	56	141	5.4	20	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/12/16
Work Order: H16100003

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R119364
Lab ID: H16100003-001AMSD	Sample Matrix Spike Duplicate				Run: 1SATURN_161011A				10/11/16 15:34
Methyl isobutyl ketone	96.0	ug/L	20	96	71	121	4.3	20	
Methylene chloride	8.00	ug/L	1.0	80	61	125	5.8	20	
Styrene	9.68	ug/L	1.0	97	75	120	6.4	20	
1,1,1,2-Tetrachloroethane	10.1	ug/L	1.0	101	76	122	0.0	20	
1,1,2,2-Tetrachloroethane	9.20	ug/L	1.0	92	67	124	0.9	20	
Tetrachloroethene	10.0	ug/L	1.0	100	75	126	0.8	20	
Toluene	9.84	ug/L	1.0	98	73	122	4.0	20	
1,1,1-Trichloroethane	9.36	ug/L	1.0	94	76	124	5.0	20	
1,1,2-Trichloroethane	10.6	ug/L	1.0	106	72	125	2.3	20	
Trichloroethene	9.84	ug/L	1.0	98	72	126	1.6	20	
Trichlorofluoromethane	11.4	ug/L	1.0	114	73	131	0.0	20	
1,2,3-Trichloropropane	8.96	ug/L	1.0	90	58	142	2.7	20	
Vinyl acetate	9.92	ug/L	1.0	99	47	154	7.0	20	
Vinyl chloride	10.2	ug/L	1.0	102	69	129	4.6	20	
m+p-Xylenes	19.2	ug/L	1.0	96	72	124	9.9	20	
o-Xylene	10.5	ug/L	1.0	105	74	123	2.3	20	
Xylenes, Total	29.7	ug/L	1.0	99	72	124	7.3	20	
Surr: 1,2-Dichloroethane-d4			2.0	107	69	131			
Surr: Dibromofluoromethane			2.0	104	70	125			
Surr: p-Bromofluorobenzene			2.0	98	76	123			
Surr: Toluene-d8			2.0	99	80	119			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Work Order Receipt Checklist

Hydrometrics Inc

H16100003

Login completed by: Tracy L. Lorash
Reviewed by: BL2000\rwilliams
Reviewed Date: 10/5/2016

Date Received: 9/30/2016
Received by: TLL
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	4.4°C On Ice - From Field		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Applicable ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

Hydrometrics, Inc.

3020 Bozeman Ave. • Helena, MT 59601 • (406) 443-4150

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
1273/600	C.O.H.

SAMPLERS: *(Signature)*

DATE	TIME	COMP	GRAB	SAMPLE NUMBER	NO. OF CON-TAINERS	Commons UF / RAW	Nutrients UF / H_2SO_4	Diss. Metal F / HNO_3	CN UF / NaOH	Total Metals UF / HNO_3	Total Recoverable Metals UF / HNO_3	BTEX	TPH	8260 LOW LEVEL VOCs - UF / HCl / 40 mL	REMARKS
9/30/16	10:30		X	CHHL-1609-100	3									X	H16100003
				1 TRIP BLANK →	1										

Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Lab	P.O. #	Shipped via: Bus FedEx UPS
	9/30/16 16:16		ENERGY LABS - HELENA	NLN 11731	Other HAND DELIVERED
					Air Bill #
Relinquished *(Signature)*	Date / Time	Received by *(Signature)*	Remarks		
			4.4° on ice hand del.		
Relinquished *(Signature)*	Date / Time	Received for Laboratory by *(Signature)*	Date / Time	Enclosed: ☐ Parameter sheet w/detection limits	
			9/30/16 16:16	☐ QA / AC standard mixing instructions ☐ Cover letter	
				☒ Other SAME AS HISTORICALLY	
				Split Samples:	
				☐ Accepted ☐ Declined	
				Signature	

HFORM-1 07/11
Action Print 406-442-7595

Return results & electronic copy to:
QA / QC Dept. at address at top of page

HYDROMETRICS, INC. OFFICES

MONTANA

HELENA (Corporate)
3020 Bozeman Avenue
Helena, MT 59601
Phone: (406) 443-4150
FAX: (406) 443-4155

BILLINGS
5602 Hesper Road
Billings, MT 59106
Phone: (406) 656-1172
FAX: (406) 656-8912

COLSTRIP
Phone: (406) 656-8305
Fax: (406) 656-8912

KALISPELL
300 Learn Lane
Kalispell, MT 59901
Phone: (406) 257-4204
Fax: (406) 443-4155

MISSOULA
667 East Beckwith
Missoula, MT 59801
Phone: (406) 721-8243
FAX: (406) 542-2619

WHITEFISH
14 2nd Street West, Suite 2
Whitefish, MT 59937
Phone: (406) 862-4937
Fax: (406) 443-4155

IDAHO

COEUR D'ALENE
2736 White Pines Drive
Coeur d'Alene, ID 83815
Phone: (208) 660-8548
Fax: (208) 765-5286